RESEARCH REPORT

PUBLIC-PRIVATE PARTNERSHIPS IN MUNICIPAL INFRASTRUCTURE

HOUSING AFFORDABILITY AND FINANCE SERIES

CMHC SCHL

HOME TO CANADIANS

Canada

CMHC—Home to Canadians

Canada Mortgage and Housing Corporation (CMHC) is home to Canadians. In everything we do, we help Canadians live in safe, secure homes. As the Government of Canada's national housing agency, we play a major role in Canada's housing industry. CMHC develops new ways to finance home purchases. We encourage innovation in housing design and technology. Our mortgage loan insurance helps Canadians realize their dream of owning a home.

Canadians benefit from our work with public, private and not-for-profit partners to improve the quality, accessibility and affordability of housing everywhere in Canada.

CMHC assistance helps low-income and older Canadians, people with disabilities and Aboriginals live in decent, affordable homes. We create jobs for Canadians with products and services that help the housing industry export its knowledge and skills to other countries.

CMHC's leading-edge research improves the quality and affordability of housing. To help Canadians benefit from our housing expertise and make informed decisions, CMHC has become Canada's largest publisher of housing information. We also have Canada's most comprehensive selection of information about homes and housing.

Canadians can easily access our information through retail outlets and CMHC's regional offices.
You can also reach us by phone at
1 800 668-2642 (outside Canada, (613) 748-2003)
by fax at (613) 748-4069
To reach us online, visit our home page at www.cmhc-schl.gc.ca

Canada Mortgage and Housing Corporation supports the Government of Canada policy on access to information for people with disabilities. If you wish to obtain this publication in alternative formats, call 1 800 668-2642.

Public-Private Partnerships in Municipal Infrastructure

July 1999

Contributing Consultants:
IBI Group
Dillon Consulting Limited
The Acumen Consulting Group
Lapointe Consulting
Paterson Planning and Research Ltd.

Prepared for
David D'Amour
Senior Researcher, Research Division
Canada Mortgage and Housing Corporation

CMHC offers a wide range of housing-related information, For details, call 1 800 668-2642 or visit our Web site at www.cmhc-schl.gc.ca

Cette publication est aussi disponible en français sous le titre : *Les partenariats public-privé en matière d'infrastructure municipale*, PF 0352.

This research project was (partially) funded by Canada Mortgage and Housing Corporation ("CMHC"). The contents, views and editorial quality of this report are the responsibility of the author(s) and CMHC accepts no responsibility for them or any consequences arising from the reader's use of the information, materials and techniques described herein.

Canadien Cataloguiong in Publication Data

Main entry under title:

Public-private partnerships in municipal infrastructure

Issued also in French under title : Les partenariats public-privé
en matière d'infrastructure municipale

Includes bibliographical references

ISBN 0-660-17875-3
Cat. no. NH15-326/1999E

1. Municipal services – Canada – Finance
2. Public-private sector cooperation – Canada
I. IBI Group
II. Canada Mortgage and Housing Corporation

HD4465.C3P82 1999 363.6'0971 C99-980316-6

© 1999 Canada Mortgage and Housing Corporation. All rights reserved. No portion of this book may be reproduced, stored in a retrieval system or transmitted in any form or by any means, mechanical, electronic, photocopying, recording or otherwise without the prior written permission of Canada Mortgage and Housing Corporation. Without limiting the generality of the foregoing no portion of this book may be translated from English into any other language without the prior written permission of Canada Mortgage and Housing Corporation.

Printed in Canada
Produced by CMHC

100-07258/

PREFACE

Adequate, efficient and well-maintained municipal infrastructure is one of the key components of a viable, prosperous economy, and a significant determinant of quality of life. As competition for scarce resources at all levels of government increases, infrastructure upgrades and expansion are becoming increasingly difficult to finance.

This paper is the third in a series of three CMHC studies looking at infrastructure finance. It explores the potential for public-private partnerships to fund the provision, operation and maintenance of municipal infrastructure. The first paper in this series looks at infrastructure finance more generally and different financing methods re discussed. The second paper looks at the ability of demand management measures to contribute to meeting future water and wastewater infrastructure demands.

Paper #1	Alternative Methods of Financing Municipal Infrastructure
Paper #2	Provision of Municipal Infrastructure Through Demand Management: Guidebook and Case Studies
Paper #3	Public-Private Partnerships in Municipal Infrastructure

TABLE OF CONTENTS

1.0 INTRODUCTION **1**

2.0 PRIVATIZATION IN THE CANADIAN CONTEXT **2**

3.0 MODELS OF PUBLIC-PRIVATE PARTNERSHIPS **4**

4.0 TOOLS: OPPORTUNITY IDENTIFICATION AND RISK ASSESSMENT **9**

5.0 CASE STUDIES **13**

5.1 Municipal Costs and Benefits 13

5.2 Partnerships Which Did Not Proceed 17

5.3 Lessons Learned 18

6.0 CONCLUSIONS **20**

BIBLIOGRAPHY **22**

ENDNOTES **24**

APPENDIX A LONG LIST OF POTENTIAL CASE STUDIES **A-1**

APPENDIX B CASE STUDIES **B-1**

1. Toronto Schools B-2
2. Pittsburgh Township—Schools and Housing B-7
3. Richmond Ice Centre B-10
4. Richmond Soccer Pitch B-13
5. Alberta Highway 14 Water Distribution Project B-15
6. Nova Scotia Schools B-20
7. Scarborough Public Library B-24
8. Waterloo Region Roads B-27
9. Rockland Wastewater Treatment Facilities B-32
10. Ottawa-Carleton: Sewage Treatment Operation B-37
11. Sainte-Marie (Beauce) Water Treatment Plant B-42

1.0 INTRODUCTION

Public-private partnerships (PPP), or "privatization"[1] is a growth industry in Canada. Conferences, forums and specialty seminars are being staged regularly across the country. Associations are running continuing education sessions for their members. Professional firms are retooling and reorganizing to focus on emerging opportunities. Governments are learning the language, methodologies and criteria for applying partnerships to public service problems. And there are a growing number of projects being planned and implemented across the country. While partnerships are gaining in momentum, however, many questions still remain. For example:

1. Do PPPs really lower costs, and if so, why? Is it because the private sector has greater experience and expertise? Are there differences in public and private labour costs? Have government bureaucracies become too inflexible and inefficient? Is there a difference in the ability to raise capital and the cost of this capital?

2. Do PPPs simply transfer debt, often government-secured, to a different account to protect a government's credit rating? Off-balance-sheet accounting or non-recourse financing may help balance the books, but it does not necessarily affect project costs, which will ultimately have to be paid either by users or by society as a whole.

3. Are partnerships simply transferring government financial problems to the future? The private sector may provide project capital upfront, but these firms have to be reimbursed, with interest, over the operating life of the facility (or the life of the contract, if it is shorter). The government may reduce its expenditures today, but does it give up long-term revenues it may previously have enjoyed? Are these foregone revenues greater than the avoided costs?

4. Can the private sector claim a capital cost allowance or a similar tax relief when involved in municipal and provincial projects? If so, is the corresponding deferral or reduction in federal revenues simply a means of indirectly transferring federal funds (through foregone federal revenues) to a municipal project?

5. Do PPPs actually facilitate or accelerate the development of housing? What are the implications in terms of municipal liability and responsibility?

This paper addresses these questions by critically examining the private sector's involvement in urban infrastructure. The study looks at the impacts of public-private partnerships on service costs and quality and examines whether privatization reduces costs to existing and new homeowners. It looks at different partnership models, discusses their strengths and weaknesses and presents a number of case studies, shedding light on which models are most appropriate under which conditions.

2.0 PRIVATIZATION IN THE CANADIAN CONTEXT

Wherever privatization has taken hold in Canada, fiscal stress has been the principal driving force. In an attempt to control expenditures, many governments are cutting capital budgets. Plans for infrastructure expansion and renewal are often the first to go. This leaner approach to public sector spending has facilitated more private sector involvement in public services. What began as a deficit management strategy for many governments, however, has frequently produced additional frames of reference and spin-off benefits, including:

- increased government exposure to more sophisticated methods of planning and financing infrastructure (e.g. activity-based costing and value-for-money assessments);
- more creativity, expertise and/or technology in the financing and delivery of public services;
- the identification of projects unlikely to proceed without expressed private interest and financing; and
- where appropriate, the operationalization of the "steering-rather-than-rowing" philosophy, where governments assume the role of "project brokers", with financing, development and operation ceded to non-government entities.

Canada's public-private market is less evolved than that of its principal trading partners. While this has allowed public sector decision makers to learn valuable lessons from experience abroad (experience that has proven instructive in everything from process development to contract drafting), it has also prevented, or at least retarded, the creation of a home-grown privatization industry capable of competing in the burgeoning international marketplace.

Despite the slow start, however, all indications are that the phenomenon of cross-sector collaboration in Canada is here to stay. The range of projects being explored and the seemingly universal appeal the idea has across political boundaries suggests that the merging of public interest and private expertise is less a question of ideology and more a matter of effective public service management.

In 1996, The Canadian Council for Public-Private Partnerships ("the Council") commissioned a survey on PPPs in Canada[2]. Approximately 200 governments and government agencies responded to the mail-back questionnaire, 86 of which were local government-related. This survey provided a range of insights, including:

- Over 90% of respondents indicated that they already saw public-private partnering as an extremely, very, or somewhat important activity in their jurisdiction, with interest highest in the Atlantic provinces and western Canada.

- Seventy-eight percent of respondents thought it likely or highly likely that their ministry or government would be involved in a partnered project within the next two years.

With regard to infrastructure:

- Under Energy and Environment (which included water and wastewater, solid waste management, and electrical power distribution), 40% of respondents indicated they were extremely or quite likely to initiate partnered projects within the next two years.

- Under Transportation (which included subways, transit, airports, roads and bridges, and parking), almost half of the respondents indicated they were extremely, very or somewhat likely to begin a PPP project within the next two years. The number jumped a further 20% when the time period was increased to four years.

- Under Recreational Facilities (the principal elements of which were arenas/rinks and parks), 55% of respondents said they were extremely, very or somewhat likely to commence partnered projects within two years; 62% within the coming four years.

- Under Real Estate (which was defined to include the development or redevelopment of public property, the sale/leaseback of buildings and property, and public housing), interest was especially high. The prospects for partnered activity in this sector was 60% over the next two years, jumping to 70% over a four year time frame.

- With some consistency, the only areas of public service delivery that respondents felt should not be open to private involvement were the administration of justice; taxation; aspects of health care; and policy development.

- There were some noteworthy "go slow" indicators in the study. Only one-quarter of respondents perceived that PPPs were likely to have a positive impact on service quality. Nearly half felt that partnered projects would mean a loss of control by government over important public issues. And the vast majority saw PPPs resulting in a major reduction in public sector employment.

- The survey confirms the growing acceptance of the value and necessity of user fees. Seventy-one percent of respondents felt that fees of some form would be an advantage in helping decision makers allocate scarce public resources. And eighty-seven percent thought they would be a useful reminder to users of the real cost of services. Municipal respondents in particular saw user charges as an important tool for promoting resource conservation, though the widespread perception about user charges as a form of double taxation remained a significant impediment.

- In terms of needed tools, the overwhelming view was that introductory presentations and seminars on "why to partner" had outlived their usefulness. Whether they were in agreement with the concept or not, senior managers are now familiar with the "whys" of PPPs. The tools most sought after include:

- information on case studies from within Canada (90%);
  - analytical frameworks for evaluating opportunities (84%);
  - information on PPP projects under consideration or development (73% among municipal decision makers specifically); and
  - sample PPP contracts (68%).

Section 3.0 provides information on partnership options (or models). Section 4.0 looks at analytical frameworks and evaluative tools. Section 5.0 provides eleven selected case studies, and information on other case studies.

3.0 MODELS OF PUBLIC-PRIVATE PARTNERSHIPS

In Canada, the word "privatization" has generally been used to refer to the sale of government-owned assets or shares to the private sector, e.g. Air Canada and PetroCan. The tendency has been to apply the word in instances where the government relinquishes all forms of legal and/or financial control. "Alternate service delivery" (or ASD) is the umbrella term most governments are now using to capture the emerging area of new service financing and delivery practices. Public-private partnerships are commonly seen as a subset of ASD and are most frequently referred to in the context of infrastructure development.

Most of the Canadian literature on partnerships begins by defining the boundaries and meaning of the term. In the case of infrastructure, whether defined as privatization or public-private partnerships, there tends to be two common threads:

- increasing involvement of the private sector in public service delivery; and
- transferring some degree of risk and reward to the private partner.

Within these broad parameters, definitions have emerged to describe particular project configurations, or partnership options. A list of some of the more common partnership options is provided below. This list is not exhaustive, but provides a series of approaches that have been tried to date. They are structural options that have been found to be effective and are worth repeating. The list does not define the limits of public-private possibilities. Those "limits" are a function of the partners, the circumstances of the transaction, timing, political will and so on.

In examining the various options, a capital letter is used to describe different private sector activities, or degrees of involvement. The letters used below are unique to this report because there is no consistency in the literature in assigning single letters to describe distinct activities. The letter "O" for example, is often used to describe both *Own* and Operate. The letter "B" is used for both *Build* and Buy. In some reports, two letters are used to describe the same thing, i.e. "B" for *Build*, and "D" for *Develop*. In the following account, each letter has only one meaning and each meaning has only one letter.

B-Build (includes Develop and Construct)
L-Lease (includes Rent)
O-Operate (includes Maintain)
P-Purchase or Buy
T-Transfer

All of these actions are from the private sector viewpoint. In other words, the public sector may sell a property and the private sector buys it. For this transaction we use the letter "P". The concept of Transfer, or "T", includes selling and donating or giving property to the public sector.

"O"-OPERATE

This is essentially the simplest involvement of a private firm in a public operation. An operation which was previously carried out by a public agency with public employees is contracted out to a private firm to operate. This procedure is often used in cases where there is no easy way to recover the costs of operations through user pay fees. The public agency that is contracting out the work negotiates the fee that it will pay to the private operator for the operation. Activities can be as diverse as collecting garbage or operating a prison. The capital costs of the project, such as a prison, are borne by the public agency as are the major costs of repair, renovation and replacement. The benefit to the public agency is that a private firm carries out the operation at less cost than the public agency would incur if it carried out the operation itself. The benefit to the private firm comes from reducing operating costs so as to maximize profit, given that revenues are fixed by agreement. Service levels and operational standards need to be set by the public agency to ensure that the private firm maintains a minimum

level of service. All operating agreements can be customized to the specifics of the local situation; public vehicles can be used by private operators, or certain activities and some of the operating costs can continue to be borne by the public agencies.

"LO"-LEASE AND OPERATE

This partnership occurs when the public agency leases a facility to a private firm and the private firm then operates the facility. As with the "O"-Operate technique, the private firm brings its expertise to the operation and maintenance of the facility, while the public agency sets the minimum operating standards. With a lease payment process, however, the private firm expects to be able to raise revenue through user pay or other revenue producing techniques. The private firm negotiates the amount of the lease it will pay and then attempts to maximize its revenue through providing a superior level of service and/or through concessions or other innovative revenue techniques. As with the "O" procedure, the private firm has an interest in reducing costs, but also has an interest in raising revenues. It may, therefore, be necessary for the public agency to negotiate fee caps as well as minimum service levels. Airports and water filtration plants are examples of facilities which can be leased to a private firm which then operates the facility.

"PO"-PURCHASE AND OPERATE

This technique is essentially the privatization of a formerly public facility. The public agency receives the payment for the facility upfront, while the private firm carries on the operation. There are obviously ongoing sources of revenue which the private firm feels will be able to offset the purchase price of the facility. The partnership aspect occurs when the public agency wishes to maintain some control over how the facility continues to be operated. The public agency may, through negotiations, set conditions regarding protection of the existing labour force, minimum service levels, and fees to be charged for the services. Because public control of a private monopoly is more difficult than one where there is competition, selling as opposed to leasing a facility would generally be used in cases where the facility would compete in the private market with other firms. In cases such as airports, the competition may, however, be in a different country.

"PBO"-PURCHASE, BUILD AND OPERATE

This type of partnership is similar to the "PO"—Purchase and Operate technique, but also includes a requirement that the private firm purchasing the facility either builds or develops a new facility or enlarges or renovates an existing facility and then operates the new or enlarged facility. This technique would generally be used in instances where the public sector no longer wishes to be responsible for the operation of the facility but at the same time wishes to ensure that employment and development goals are met. An example might be where a government sells a manufacturing concern with the stipulation that the purchaser invest a minimum amount of capital in plant improvement or expansion within a certain period of time. Again, the purchase and sale agreement may contain requirements for maintaining operations and/or labour force levels for a specified period of time. The requirement for the purchaser to invest further capital in the facility may reduce the public sector sale price from that which would have been received from a straight "PO" transaction with no requirement for the purchaser to invest additional funds. In this way, the procedure could be a technique whereby the public sector, in effect, invested capital in economic development (through a reduction in income) while not, at the same time, appearing to spend the required money.

"LBO(T)/LB(T)O"-LEASE, BUILD AND OPERATE

These techniques involve the leasing of a facility to a private firm with the requirement that the private sector then build a new facility or expand the existing facility and operate it for a period of

time. This forms a type of "wrap around" technique and could be used in a situation where the private firm leases a portion of highway, constructs an addition, runs the project as a toll road for a number of years and then transfers ownership back to the public agency. For political and administrative purposes, it may be required that the transfer of ownership of the new facility take place immediately upon construction and the combined facility is then operated under an agreement. The Dartford Bridge in England is an example of this technique and provides the private firm with ongoing revenues from the leased facility, while the building and development of the new facility is underway.

"B"-BUILD

This is the standard "turnkey" operation. The public sector enters into an agreement with a private firm to construct a facility for an agreed upon amount and to immediately turn it over, upon completion, to the public sector for operation. The public sector is responsible for arranging the ultimate capital financing for the facility and benefits from reduced construction costs over what would be the case if the facility was constructed by the government itself. Again, as in a type "O" partnership, the public benefit results from value engineering or the ability of the private firm to undertake the task at less cost and/or less time than the public sector. Once built, such a facility could, of course, be subject to some type of operating arrangement.

"BTO/BOT"-BUILD, TRANSFER AND OPERATE OR BUILD, OPERATE AND TRANSFER

In both of these techniques, the public sector enters into an agreement with the private sector whereby a private firm builds and operates the facility. Some or all of the financing cost of the construction is the responsibility of the private firm. Once completed, the facility is operated by the private firm and the excess revenues over what is required for ongoing operating costs is then used to pay off the loan originally undertaken by the private firm to construct the facility. At the end of the set period of time or when the capital cost has been reimbursed, the ownership of the facility reverts to the public agency. In some instances, the facility is transferred immediately upon construction due to the needs of regulatory requirements for public ownership or other taxation reasons. In these instances, the operating agreement would provide the same types of guarantees and required service levels as it would if the facility remained in private ownership until the end of the lease period. In some instances, the transfer at the end of the "BOT" partnership may not take place but may be replaced by an ongoing operating agreement in order to continue to utilize the operating expertise of the private sector firm.

"BO"-BUILD AND OPERATE

In this type of partnership, the private sector builds and operates a facility and is responsible for capital financing. However, due to monopolistic or social welfare concerns, the operation is regulated and controlled by a public body. Both the levels of service and the fees charged can be subject to regulations. Examples are privately owned utility monopolies such as phone, electricity and cable companies.

"BT"-BUILD AND TRANSFER

This is the type of partnership where the private firm builds infrastructure facilities on private land and then turns the facilities and the land over to a public agency, often at no cost to the public agency. This would include situations where land is being subdivided but the created parcels cannot be sold until servicing is provided. The owner of the land would then be responsible for such things as building the roads, curbs, sidewalks and installing sewers, water lines, electrical facilities, telephone and/or cable line. Eventually the land with these facilities would be turned over to various public bodies. Parkland might also be developed and transferred in a similar way. The benefits to the public agency are self-evident; the benefits to the private sector are that without such

facilities, the value inherent in the land cannot be realized.

"T"-TRANSFER

In this type of partnership, the private firm simply transfers land to a public agency. This is generally an exaction required by a public agency. This land may be used for park or transportation purposes or for the construction of a public facility such as a library. The transfer of money, such as a "cash contribution," may also be required. As with the "BT" type of option, such a transfer would be required as a condition of approval of a rezoning or increase in density whereby the private benefits could not be realized unless a transfer were to take place.

FINANCIAL ARRANGEMENTS

In addition to a variety of building and operating agreements, there are examples of public-private partnerships where only non-traditional financing is involved. The normal financial models, which could also be seen, in a way, to be public-private partnerships, are ones where general taxes are collected from property or retail sales or income, and monies so raised are then used by the public agencies to build and operate facilities. Bonds may be issued by the public agency for upfront capital needs and then be repaid through taxes. The other normal financing technique is for the public agency to collect user fees to pay for the services. The latter may include government run telephones, water works, electrical distribution and toll roads.

Innovative techniques include a variety of value capture or beneficiary pay schemes. These can be seen as directed levies where the amount of the tax is proportional to the amount of benefit that the property owner gains from the construction and operation of a public facility. Where, through the provision of new roads or transit facilities, the value of private land increases, a value capture technique would charge a levy back for some, but not all, of that increase in value. A study commissioned by Canada Mortgage and Housing Corporation and carried out by Mohammed Qadeer and Andrejs Skaburskis of Queen's University ("Recapturing of Unearned Increments, Land Taxes and Betterment Levies", June 1994) reviews theories of recapturing gains in land values and analyzes the experiences of Canada, Britain, Australia, and the U.S. in implementing these measures. Examples are land value or speculation taxes, development cost charges, betterment levies and expropriation.

A beneficiary pay charge goes beyond user fees and/or value capture techniques to assess fees where non-users benefit. An example is a gasoline tax which would be used to pay for a subway. The justification would be that automobile users benefit through reduced congestion because of the transference of many drivers to using public transit. Another example is a special tax on retail businesses levied because of the additional sales enabled by the increased accessibility resulting from a new transportation facility.

Another innovative financial arrangement is "front ending"—a loan from a private consortium to a public agency to advance the construction time of a public undertaking in order to accelerate the timing of new development. Examples would be the public construction of a road where the developer would pay the costs upfront and then be reimbursed at the time that the public agency had originally scheduled construction of the road, or the public construction of a major sewer project financed by a private firm which would then be reimbursed through charges made to hook up new customers.

In examining alternative finances, an entire range of revenue sources can be included. These would include property taxes and assessments; user fees, tolls and transit fares; government operating grants and subsidies; sale or lease of surplus property, development rights, easements, density bonuses, operation of concessions, operation of space, or advertising; connection fees; development charges; negotiated exactions; payroll or income taxes; sales taxes; parking fines; vehicle licence fees and even lotteries. This list is not based on known specific examples

of use nor is it necessarily exhaustive. Rather, it is simply given to suggest that there exists a wide range of possible partnerships and interactions between public and private agencies that can be explored further to determine new arrangements that meet particular circumstances and situations. It may not be too far-fetched to suggest that, over time, there will come a blurring of the public and private sectors of society as both move to an entrepreneurial approach which includes a concern for the welfare of all segments of society.

4.0 TOOLS: OPPORTUNITY IDENTIFICATION AND RISK ASSESSMENT

Because most local governments in Canada are somewhat inexperienced in the field of PPPs, projects are often considered in isolation, without the benefit of an overarching privatization policy and without standardized tools for comparing the merits of alternative projects or approaches.

Historically, one of the strengths of public sector decision making has been an attention to process. Programs tend to unfold against a backdrop of carefully considered policy. The policies generally emerge after careful and arduous reflection, consultation and debate. To date, however, these have not been the hallmarks of the privatization movement. Projects have invariably resulted from one of two forces:

a) fiscal stress within a department or agency that has resulted in short-term pressure for cost cutting/cost management; or
b) an unsolicited proposal from the private sector that is too timely and attractive to ignore.

In both cases the net effect has been for governments to move tentatively in the direction of a project, usually without the benefit of a more general privatization or multi-project framework.

Ideally, the selection of a project for privatization—and the measures of its viability—should be traceable back to pre-determined criteria set by the municipality. Issues, such as price (measured against the municipality's independently prepared "shadow bid"), the apportionment of project risk, and preferred legal arrangements are best determined *before* submissions are requested. Experience indicates that without these benchmarks, projects tend to become captive to the negotiations that ensue between the partners.

To minimize uncertainty, some cities have started using tools designed to define ideal candidate projects. The three examples summarized below indicate ways in which project parameters can be defined, government expectations clarified, and short-listed projects prioritized.

Winnipeg's Model

Early in 1998, the City of Winnipeg started using a package to assist officials to identify potential partnership projects. When fully implemented, the following four outcomes are anticipated:

1. The model will provide a profile of each public service, including a description, a profile of the clients served, and an indication of the value of the service. A comprehensive review of the City's services is expected to help focus discussion at both the political and administrative level about core versus non-core services.

2. Once completed, the model will facilitate the preparation of service-based or program-based budgeting, and activity-based costing analysis. This type of information will play an instrumental role in determining whether a particular service is best provided by the City, or through some alternative delivery format.

3. The model will also provide a framework for performance measurement. As envisioned, the collection of this type of baseline data will help administrators measure the effectiveness of any alternative service delivery option being contemplated.

4. Finally, by running the model simultaneously across all government departments, potential overlaps and opportunities for reconfigured service delivery arrangements can be identified. (Winnipeg was expected to have completed this particular review process by the spring of 1998.)

Indianapolis's "Managed Competition" Model

In 1993, the City of Indianapolis began a program of "managed competition", creating an ambitious process to examine all of the City's operations.

Using standardized questions to see where private money, expertise and know-how might be used in the delivery of public services, a public-private commission was established to review all of the municipality's physical and service needs. The premise of the approach is the need to "build a climate for privatization", rather than attempting the transition piecemeal. The program has been deemed a success, receiving almost universal accolades from business, labour, analysts, as well as the public-at-large—a testament to the merits of a more comprehensive approach.

The Acumen Consulting Group's "Opportunity Audit"

Another model, developed by The Acumen Consulting Group for the Canadian context, is described in detail in The *3Ps of Municipal Finance: How Local Governments Can Use Public-Private Partnerships to Finance, Build and Operate Services* (1997). The Acumen Group's "Opportunity Audit" was specifically designed to help municipalities look comprehensively at their current and future infrastructure needs, to determine project costs, policy and implementation priorities. The six-stage "Opportunity Audit" process is intended to be completed prior to projects being announced or proposals being requested. The Audit provides an analytical framework against which future initiatives—generated by the public sector or privately—can be assessed. The following is a summary of the process:

Stage 1: Selecting the Range of Services to be Examined

- Define the parameters of the study and determine the key strategic issues to be addressed.
- Identify the appropriate resources to conduct the study, and clarify roles and responsibilities of all internal and external resources.
- Determine who is to be consulted both within and outside of government.

Stage 2: Identifying Public and Private Sector Capabilities and Interests

- Assess the relative strengths and interests of the public and private sectors in delivering the particular service. Aside from creating a profile of capabilities, this process will result in a ranking of needs, values and preferred outcomes as seen by the municipality.

Stage 3: Settling on Potential Models/Structures

- Examine possible options for privatization and develop evaluation criteria. Common indices in these types of evaluations include:
- government's need to control service levels and related performance measures;
- the ability to predict and control future costs;
- whether the municipality has the requisite management capability;
- the project's risk profile;
- whether the government needs to own the particular asset;
- the disposition of public sector employees;
- the transitional structure in the case of an existing service.

Stage 4: Assessing Negative Impacts and Mitigating Risk

- Focus on the concerns of stakeholders, and attempt to reduce or eliminate negative policy or practical impacts of the new service. Commonly considered factors would include: service quality and reliability; management accountability; cost/price balance; public perception; employee repositioning; exit strategies; and back-up systems in the event the privatization should falter or fail.

Stage 5: Cost Analysis, Evaluation and Recommendation

- Evaluate potential models against qualitative and quantitative criteria developed through the course of the project.

- Conduct service improvement and cost-benefit analyses to determine preferred approach.
- Develop a project business plan.

Stage 6: Implementation

- In the sixth and final stage, projects and models chosen would be ready for implementation.

Assessing Risk Factors

More than anything else, successful partnerships are a matter of "managing risk". Although part of the assessment tools described above, risk apportionment merits separate attention and reiteration because of the crucial role it plays in every public-private sector collaboration.

Risks vary by project, but in each case complex and interwoven forces and issues need to be measured and accounted for. As a growing number of municipal managers are discovering, it is best that this list of key variables be identified and planned for early in the process—ideally before private expressions of interests or proposals are ever called for.

A recently released guidebook by the Government of Nova Scotia entitled *Strategic Public-Private Partnering: A Guide for Nova Scotia Municipalities* (1997) sets out a series of risk factors worth considering in advance of any infrastructure privatization:

- *Loss of control*: privatization may lead to some or considerable control being transferred to the private sector for determining types of service offered, service levels, timing and service pricing. The commissioning government should be clear prior to negotiations precisely what degree of control it's prepared to relinquish and in return for what types of assurances (particularly around service price, accessibility and quality).

- *Confused lines of accountability*: depending on the deal structure, the private partner may not be directly accountable to the public. Public resources may be required to ensure that the private partner is meeting contracted service requirements. There may also be cause for considering a creative regulatory apparatus to provide the public with a grievance procedure giving them direct access to the service provider.

- *Increased user costs*: since municipalities frequently don't account for all costs in setting user charges, the transfer to a private provider often results in increased rates. Where government does not permit "market rate" user fees to be charged, it should expect the private partner to be guaranteed a revenue stream in some alternate form.

- *Loss of public sector jobs*: particularly where an existing service is being moved to private-delivery, public sector employees may be faced with job losses or significant changes in their existing positions. This too is an issue to be addressed early in the planning process and should be covered in the contract.

- *Limited competition*: where municipalities are seeking to increase private sector participation in services that have been provided exclusively by the public sector, there may be a danger of replacing one form of monopoly with another. Price setting and formulas for price increases take on particularly significant meaning in these types of arrangements.

- *Limited control over public policy*: municipal policy objectives, such as equal opportunity employment, standardized service levels and guaranteed minimum wages, may be difficult to realize under partnered arrangements. he importance of government policies should be stated early in the process and covered within the terms of the partnership agreement.

- *Perception of bias in the selection process*: not only must government procurement be fair, open and objective, it must be seen to be

so. Non-competitive selection may expose the municipality to charges of favouritism or exclusion. This is especially true when innovative service delivery solutions are required and the lowest cost bid may not necessarily be the one selected.

- *Transfer of assets*: the transfer of highly visible assets may be perceived negatively by the public or may not be permitted under provincial legislation. Where ownership of a particular asset is to be transferred to the municipality at the end of the contract period, the contract should specify upkeep to be maintained and the condition of the facility upon its return to the municipality.

- *Confidential information*: privatization may require the private partner to have access to privileged or confidential data. Without sufficient safeguards and penalties, there is the potential for abuse. As the guidebook points out: "While [privatizations] may be beneficial in transferring some risk to the private sector, complete risk avoidance usually comes at a very high price. The challenge is to negotiate a partnership where the risks of doing business are more than offset by the resulting benefits."

Like all business partnerships, the parties to a privatization initiative must be keenly aware of, and aggressive about their respective interests. Each side must ensure that their interests are reflected in the ultimate agreement. This sometimes presents problems for governments which are often unaccustomed to bargaining as partners, and generally unfamiliar with the concept of risk assessment and risk management.

As described by Roger Bridges in the chapter on "Risk Management" in The *3Ps of Municipal Finance*, the task is to adopt a rigorous approach to all possible risks, and provide a best estimate of the magnitude, consequences and probability of each risk occurring. The cumulative effects of risks can then be studied, focusing on the extent to which the occurrence of one risk will trigger another. Having identified and analyzed the risks, it is then possible to develop a profile of risk management measures.

The detailing of risk assessment models is beyond the scope of this study. However, it is important to note that the probabilities and consequences of different risks should be carefully examined in the planning stages of projects. In addition, the task of identifying risk is intimately linked to the challenge of "pricing" it. For example, both parties may agree that weather conditions, future residential development, and traffic demand are key risk variables for a given project. However, the question is what price each ascribes to these risks, and what conditions and assurances are exacted in return.

5.0 CASE STUDIES

In the course of this study, a long list of potential case studies on public-private partnerships was developed through literature searches, surveys, telephone calls, and hands-on experience. This long list is contained in Appendix A and includes information on the municipality, the type of partnership initiated, project value, and time frame. From the long list of projects, eleven case studies listed in Table 5.1 were chosen for more in depth analysis. Detailed information on each of these case studies can be found in Appendix B.

This section of the report summarizes the key findings from the case studies, including general observations, successes, failures and lessons learned. At the end of the section, an attempt is made to answer some of the questions posed in the study's introduction related to costs, accounting practices, and impacts on housing.

The eleven case studies chosen for in-depth review can generally be grouped into the following four categories:

1. Examples of joint construction/use of facilities:
   - Toronto Schools
   - Pittsburgh Township—Schools and Housing

2. Examples reducing upfront infrastructure capital costs:
   - Richmond Ice Centre
   - Richmond Soccer Pitch
   - Alberta Highway 14 Water Distribution Project
   - Nova Scotia Schools

3. Examples reducing infrastructure operating costs:
   - Ottawa-Carleton Sewage Treatment Operation
   - Sainte-Marie (Beauce) Water Treatment Plant

4. Examples where costs transferred to private sector:
   - Scarborough Public Library
   - Waterloo Region Roads
   - Rockland Wastewater Treatment Facilities

5.1 MUNICIPAL COSTS AND BENEFITS

The Government of Nova Scotia's guidebook on privatization ("*Strategic Public-Private Partnering*") mentioned in Section 4.0 above lists the following commonly cited arguments in favour of PPPs:

Table 5.1
Short-Listed Case Studies

Project	PPP Type	Infrastructure Type
Toronto Schools	Design/Build/Operate	School
Pittsburgh Township—Schools and Housing	Design/Build/Lease	School and Recreational
Richmond Ice Centre	Build/Lease	Recreational
Richmond Soccer Pitch	Build/Operate	Recreational
Alberta Highway 14 Water Distribution Project	Design/Build/Own/Operate	Water Supply
Nova Scotia Schools	Design/Build/Own/Operate	School
Scarborough Public Library	Finance	Library
Waterloo Region Roads	Finance	Regional Roads
Rockland Wastewater Treatment Facilities	Build/Finance/Operate	Wastewater Treatment Facility
Ottawa-Carleton Sewage Treatment Operation	Operate	Wastewater Treatment Facility
Sainte-Marie (Beauce) Water Treatment Plant	Operate	Water Treatment Facility

- *Construction cost savings*: Combining design and construction components under one private partner can result in significant cost savings through a "phased-in" construction schedule, faster procurement, and a reduction in cost and time overruns.

- *Operational savings*: In some cases, private sector service providers are able to reduce operating costs through the operation of multiple facilities, the sharing of specialized labour, bulk purchasing, the use of centralized administrative staff and more flexible compensation arrangements.

- *Faster implementation*: By dealing with fewer service providers, combining the design and construction, reducing procurement time, and accelerating capital financing, required infrastructure may be introduced faster and less expensively.

- *Risk sharing*: Under traditional procurement practices, governments assume all risks associated with service delivery. Privatization allows the transfer of some risks related to cost overruns, market fluctuations, ongoing maintenance, environmental regulatory compensation, and so on.

- *Financing options*: The wide range of financing options (both debt and equity markets) and the flexibility available to the private sector (i.e. the ability to periodically refinance debt or use financial innovation) may, in some instances, reduce the cost of project capital.

- *Enhanced public management*: In allowing a greater role for the private sector in the provision of municipal infrastructure, local government managers are able to spend more time planning and monitoring results as opposed to managing the resources required to provide public services.

- *Increased public sector revenues*: Privatizations may provide municipalities with new sources of revenue in the form of property taxes, lease or franchise payments, or profit sharing agreements.

- *Realize the value of under-utilized assets*: Creative development projects combined with intensified marketing initiatives by private sector service providers may succeed in increasing the use of a particular asset to reflect potential value.

- *Enhanced facility maintenance*: Municipalities are often reluctant or unable to dedicate appropriate funds for ongoing maintenance of facilities despite the long-term savings it may generate. Depending upon the structure of the partnership, private partners are motivated to protect the value of their assets and invest in equipment and machinery that lead to increased efficiency.

- *True costing and true value*: The price of municipal services, in the form of user charges or the general tax rate, seldom reflects the full cost of the service (i.e. depreciation, risk capture, overhead, etc.). Among its other benefits, the privatization process forces municipalities to determine the real cost of service delivery.

- *Arms-length independence*: Privatizations often facilitate efficient and needs-based delivery of services by removing political influences from day-to-day operations.

The case studies indicate that municipalities frequently have more than one of the above objectives in mind when entering into a partnership agreement. Different combinations of these benefits were realized to varying degrees for different projects. However, some of the recurring themes included:

1. ***Lowering Costs***: There appear to be a number of reasons why the private sector may be able to lower costs, including:
   - economies of scale;
   - efficiency due to expertise; and
   - lower capital costs.

Economies of Scale

Economies of scale were apparent in cases such as the Sainte-Marie-de-Beauce Water Treatment Plant. New treatment facilities require highly skilled operators to ensure maximum efficiency. More specialized skills are required in times of breakdown or emergencies. While it is very expensive for a small municipality to acquire and maintain these skills in-house, private sector firms can spread the costs among a number of municipalities. By privatizing its operation, Sainte-Marie-de-Beauce has access to all the necessary skills, while sharing the costs with other municipalities. Sainte-Marie-de-Beauce also benefits from the private sector's awareness and understanding of changing technologies in the field of environmental management and from the inherent competition in the private sector. If the contractor is not on the leading edge of treatment technologies, the contract may not be renewed.

For the Alberta Highway 14 Water Distribution Project in the County of Strathcona, Alberta, the municipality could have borrowed the money, acquired the necessary easements, built a water supply line, and billed customers for water, however it was more efficient to partner with Canadian Utilities (CU) for these purposes. Because Canadian Utilities already owned a right-of-way for gas and electricity that could also be used for water, they were able to construct a pipeline faster and cheaper than the municipality could have. In addition, Canadian Utilities was able to add the reading of water meters to its existing system for gas and electricity. Economies of scale were achieved by reading more than one meter per visit.

Efficiency Due to Expertise

Efficiency due to expertise is essentially a specialized form of economies of scale. Virtually all of the projects reviewed benefited in some capacity from private sector expertise. In Fort Saskatchewan for example, the operating contract provided incentives for the private partner to optimize operations. Energy conservation was one of the results, with 75% of the savings going to the municipality and 25% to the private partner.

Ottawa-Carleton benefited from private sector management and expertise by privatizing a key component of their sewage treatment plant that includes state-of-the-art machinery and sophisticated computer operations. It would not have been feasible to hire the appropriate expertise, or re-train existing employees to operate this system. The contract is for ten years to ensure that the costs incurred by the private sector in dealing with the new operations can be spread over a reasonable period of time.

Lower Capital Costs

As mentioned above, a major cost-saving was realized in the Highway 14 water services partnership with Canadian Utilities via CU's ownership of the right-of-way for the water pipeline. This right-of-way was essentially under-utilized capital which the private sector was able to provide at significantly less cost, compared to public sector cost estimates for finding an appropriate right-of-way.

In Richmond, British Columbia, Honda built, at its expense, a year-round soccer pitch which is operated by the municipality. The municipality gained a facility for which there was great demand at a time when there were competing priorities for capital expenditures. Honda had extra land for expansion and was planning to use this for employee recreational purposes in any case. In return for expanding the operation and making it available to the general public, the city supported Honda in a reassessment of the land value and a corresponding reduction in yearly property taxes. Over time, this reduction has more than repaid Honda for the capital costs of

the facility. By, in effect, combining the capital costs of what would have been separate private and public facilities, there were savings in capital costs.

As another example, in Richmond, British Columbia, a developer proposed the construction of a municipal arena on privately owned land. While other developers were proposing arena construction and operation partnerships, they were all on public land. Arenas are almost always based on user fees and can be profitable ventures. In providing the land, the developer was providing a subsidy which made the partnership even more attractive to the municipality. The landowner benefited by the facility acting as an added attraction for the development of other land owned in the same industrial subdivision.

In some cases, the public sector can realize cost savings simply because the private sector is so eager to proceed with its development. In the case of the arterial roads in the Waterloo Region, a condition in the Subdivision Agreement was that the roads had to be in place before final approval would be given. The Region had scheduled the construction of the roads. The developer could have postponed the project until the Region had built the roads, but this would have resulted in additional carrying costs, and there was no guarantee that the road construction would not be further delayed. To eliminate the uncertainty, the developer chose to front-end the cost of the arterial roads. These costs were then internalized in the developer's land, which had been purchased years earlier at much lower prices. (Where a property is not already owned by a developer, road costs and other development conditions that are known in advance can be internalized to some extent by reducing the price that is paid for raw land.)

2. ***Reducing Risks***: There are various risks involved in the provision of services, including fluctuating costs and revenues. As risk is, to some extent, an inverse function of expertise, in some cases, private sector partners are able to minimize risk by reducing uncertainties with respect to construction, operation, maintenance, and so on.

   In the Ottawa-Carleton example mentioned above, the private sector partner has, in fact, run the privatized component of the treatment plant more efficiently than originally anticipated and profits have been correspondingly higher. While some concern has been expressed that the profits may be too high, when the contract was signed there was a risk that the new facilities would not run as well as anticipated and that there could be a period of time of low profits or operating losses.

3. ***Access to Private Sector Money***: Municipalities are frequently faced with either legislated limits or ratepayer resistance to the amount of debt they can assume. In some cases, accessing private capital may be the only alternative. Private upfront financing was a key factor in the Alberta Highway 14 Water Distribution Project. It is difficult to estimate the value of this benefit to the public sector, as it varies with the urgency of the project and the limitations on municipal debt.

   In some cases, private funds are accessed through deals, or agreements made during the planning process. In the case of the Scarborough Public Library, it is unlikely that the developer wanted to donate $500,000 to the Scarborough Library Board. However, the developer did want a rezoning to build apartments, which was conditional upon the library contribution (among other things). For such a partnership to be feasible, the private sector must factor these costs into their pro formas. This in turn affects the price developers are prepared to pay for land and their profit margins. If the costs are too high, the project will not proceed.

   The developer of the City of Toronto Railway Lands (see Toronto Schools case study in Appendix B) agreed to contribute to school construction, partly as a condition of

approval, and partly due to the recognition that housing sales would be improved with good schooling in the neighbourhood.

In another example, involving a private sector "donation", an obsolete primary school in North York (see Toronto Schools case study in Appendix B) was re-zoned for residential development as well as for educational purposes. Although the residential zoning was of no use to the School Board, it was valuable to the adjacent property owner, provided the zoning could be transferred from the School Board's site. The transferred residential zoning and resultant development enabled the developer to build a new arts school for the Separate School Board. This mutually beneficial partnership was made possible by the existence of two local conditions:

- a regulatory mechanism to enable the "transfer of development rights"; and
- local unmet demand for the land use, or zoning (i.e. residential) that was being transferred.

5.2 PARTNERSHIPS WHICH DID NOT PROCEED

Not all partnerships proceeded, but there is something to be learned from these as well.

In Pittsburgh Township, for example, a partnership between the Separate School Board, the municipality and a private developer was unsuccessful for various reasons. The proposal was to share parts of a school facility with a public recreation facility and a senior citizens' housing development. Shared land acquisition costs, parking, heating and other shared elements were expected to reduce capital and operating costs. The developer would benefit by constructing the entire shared facility, as opposed to three separate projects being built by separate developers. The partnership did not proceed for the following reasons:

- *Loss of control*: The School Board was concerned that "outsiders" (non-students and non-employees) would have access to school property because of the shared facilities. Sharing facilities can result in a loss of sovereignty for all parties.

- *Contractual issues*: A three-way partnership involves the time-consuming preparation of a complicated contract. Questions of access, liability, usage, maintenance, and so on, must be negotiated and clearly articulated in legal documents. In the case of Pittsburgh Township, there was insufficient time to resolve the details, particularly the financial details, and still meet the school board's deadline for the completion of the school.

- *Regulatory Issues*: The negotiated solutions of public-private partnerships often fall outside of standard operating procedures. While the parties involved and local governments may be willing to deal in novel ways, there are often regulations at the provincial level which inhibit this flexibility. In Pittsburgh Township, the Province was responsible for providing between two-thirds and three-quarters of the construction cost of the school, and had guidelines regarding the tendering and design of schools. Dispensing with the open tendering process and negotiating with a single construction company requires significant exceptions to the standard rules.

- *Costs*: As the negotiations proceeded, there was some concern that the projected cost savings associated with the partnership would not materialize.

Another example of a project which did not proceed is the planned sewage treatment plant in Rockland, Ontario. In this case, the private sector was being asked to finance the construction of the treatment plant. Their capital investment was to be reimbursed by charging a levy on new construction on a house-by-house basis at the building permit stage of development. The hookup charge was to increase by 12% per annum to account for the partner's carrying costs. A slowdown in the Ottawa-Carleton housing market was partially responsible for

spoiling the deal. As the market declined, there was increasing concern that the 3,500 units that were to benefit from the treatment plant would not be built fast enough. It was felt at the same point that the even higher hookup charge would act as a deterrent to development, further slowing growth. If the 3,500 units were not built by the end of the 20-year agreement, the private sector partner would have lost money. The negotiations broke down as a result of the risks involved.

5.3 LESSONS LEARNED

Procedural Issues

What is instructive in the projects considered in this study is that while the motivation for municipalities to pursue partnerships is reasonably clear, the process for selecting and vetting projects is generally less so. Experience to date suggests that municipalities are generally under-prepared for the task of assessing the real costs and risks of the projects they propose, as well as the submissions they receive. The issue is principally one of inexperience rather than inadvertence. In their enthusiasm for moving forward, governments often issue a call for proposals with somewhat ill-defined criteria regarding the ideal outcome. Out of relative inexperience, many projects are launched without answers to fundamental questions, including:

- Why is the project being developed as a partnership?
- What are the expected outcomes?
- How do you measure the success of the privatization initiative?
- What criteria should be used and are they measurable?
- What risk profile is the government expecting to achieve?
- What is to be off-loaded onto the private partner?
- What are the project's financial imperatives?

To help answer these questions, there are at least three steps that should be followed in the process of determining the feasibility of a potential partnership:

- identification of the optimal technical solution;
- preparation of a shadow bid; and
- public consultation.

Identification of the Optimal Technical Solution

The optimal solution to a problem determines whether and what type of an arrangement is desirable. Only after the best technical solution is found is a public-private partnership considered—the key point being that a partnership should be the least-cost means of implementing the best solution. In most cases, the partnership does not determine the solution; rather, the solution determines the partnership.

Preparation of a Shadow Bid

A "shadow bid" is essentially the identification of the costs and risks of the municipality undertaking the project by itself, without private sector involvement. This bid can then be compared to private proposals using full-cost accounting techniques. For example, entering into a partnership involves preparation time for the municipality, legal costs, monitoring and evaluation costs, and other staff time and resources. While all of these public costs should be included when considering private sector bids, full-cost accounting of partnerships is generally one of the weak spots found in the literature review and case studies.

Public Consultation

Ultimately, it is the users of a service that determine its value to the community. In the case of the Alberta Highway 14 Water Distribution Project, one of the municipalities involved (Town of Tofield) had an outdated water plant for which failure was imminent. The potential economic costs to residents and businesses of an extended interruption in water service would have been significant. The Highway 14 Regional Water Services Commission undertook extensive public consultations, presenting the least-cost solution with minimal implementation delays. In a plebiscite on the issue, the Town was 75% in support of the project, helping to ensure the success of the partnership.

Assessment

One of the problems in assessing the merits of Canada's privatization experience is that while a number of projects are operating or under development, most are too new for their impacts to be adequately assessed. As suggested by the projects profiled in this study, municipalities are still learning how to measure and monitor the results of partnered service delivery. A number of general observations are possible, however, regarding the experience to date:

- Like any project, the success of privatized ventures is a function of their objectives. The myriad of operating and maintenance contracts in place around the country are "successful" insofar as they reduce government operating costs—generally through management efficiencies and economies of scale.

- Privatization seems to be most effective when an identified public need can be coupled with a defined private interest. More specifically, where a government project has private development potential either on-site, or nearby. In these cases, the private sector usually gets access to land, re-zoning or a related development opportunity, while government gains a service (ideally) below market costs.

- To date, there is very little evidence that PPPs are part of a broader "strategy" or "vision" at the municipal level. Projects tend to be one-off experiments looking at process and costs. More rigorous planning is required, including better tools for benchmarking, analyzing costs, evaluating risks, setting preferred project outcomes, and so on.

- More quantitative analysis is required throughout the life of a project: upon contracting; at the end of an initial period of operation (i.e. 1-2 years); midway through the contract; and upon transfer of the facility back to the municipality, or termination of the agreement.

- There is a need to "institutionalize" the partnership process. An option used in some American cities as well as in developing economies, has been to create a secretariat to house resident expertise. Designed on either a permanent or as-needed basis (depending on project volume), the intent is to create both economies of scale and expertise, and also a more streamlined and predictable process for project identification, partner candidate selection and contract negotiation.

- To this point, Canadian municipalities have been relatively cautious in their privatization ventures, most likely for two reasons. First, experience world-wide in this area suggests that governments willing to involve the private sector in public services, begin by devolving authority over only the delivery function, but keeping control over financing and standards. Only over time, as confidence grows about how best to structure these arrangements, do governments inch toward passing more of the financing risk and related operating decisions to the private partner. Second, the market size of Canadian municipalities relative to their capital requirements tends to bump up against the private partner's preferred user charge for the service. The problem is that what the private sector requires in terms of "user-fees" to finance a project without government backing, is often politically prohibitive. While that is not the case in every project, it has been a frequent impediment to off-loading project risk in a number of attempted privatizations. In the right circumstances, one alternative would be to link the needed facility to an abutting or adjacent development right, where the private proponent's chance to proceed with this second or separate opportunity gets reflected in the overall project price. Though a relatively new concept for the emerging privatization market, the idea was first utilized successfully in an infrastructure context over a century ago in the development of Canada's national railway system.

6.0 CONCLUSIONS

Several questions were asked at the beginning of this paper:

Do partnerships result in lower costs? In the case of operations such as the Sainte-Marie-de-Beauce Water Treatment Plant, the answer is "yes". This is the result of economies of scale, and the experience and expertise of the private sector operator. In the Ottawa-Carleton Sewage Treatment Operation example, the answer may be "yes" in the short term due to an immediate need for extra staff and expertise, and "no" in the long term due to the extra costs resulting from a split operation.

In the case of joint development of different facilities such as schools and recreational facilities in Toronto, the answer is "yes" as there are savings in land costs, in the elimination of duplication of heating and support facilities, and in the sharing of other facilities. In the examples of construction of facilities by the private sector, there are savings to the municipality in cases where the private partner has external benefits to achieve (reduced taxes on land in Richmond, BC, which Honda wished to hold anyway for future development or the development of an Ice Centre as a selling tool for other land the developer owned, also in Richmond) or can achieve economies of scale in both construction and operation. (In Edmonton, Canadian Utilities already owned a right-of-way and were already providing a gas service to households so that the additional cost of constructing and operating a water supply system was not as great to it as it would have been for the municipality.)

In Nova Scotia, there may be lower costs in providing schools due to innovative design, and better coordination between the designers of the school on one hand and the providers of computer systems and ongoing maintenance operations on the other.

Do partnerships transfer costs from the public to the private sector? In the examples of the Richmond Ice Centre, the Richmond Soccer Pitch, and the Edmonton Highway 14 Water Distribution Project, the costs are transferred to the private sector but are then offset by other private sector benefits. However, in the case of the Scarborough Public Library construction, the Waterloo Region Roads, and the Rockland Wastewater Treatment Facilities, costs either are, or would have been, simply transferred from the public sector to the private sector where they are either absorbed as reduced private sector profit or passed on in the increased price of homes. In the case of Nova Scotia Schools, the costs are effectively passed from the public sector (reduced capital requirements today) through the private sector (design, build, operate) to the public sector in the future (ongoing lease payments).

Do partnerships facilitate development? Where essential facilities are lacking, anything that gets them built will facilitate development. Without the Waterloo Region Roads, development would not have been possible. Without sewage treatment facilities in Rockland, development will not be possible. In the case of schools, development can proceed in their absence, but the resulting costs and inconvenience of bussing and portables can reduce the selling attractiveness of new homes. In the case of the Scarborough Public Library, the municipality used its power to refuse the necessary rezoning as a bargaining tool to acquire the land and financial contribution for the library.

Are there liability problems? In the operations of a sewer or water system, the liabilities and responsibilities of each partner can and must be spelled out clearly in the agreement. In the absence of such a comprehensive agreement, the Toronto Board of Education and the City of Toronto have had ongoing disagreements with regards to maintenance and responsibility. In the type of partnership where facilities are to be returned to the public agency at the end of the agreement, a detailed maintenance schedule

should be included in the agreement. The absence of such a schedule resulted in Windsor acquiring a road tunnel on which virtually no maintenance had been performed over the previous ten years. (See Appendix A.)

How do partnerships affect the price of housing? Housing costs have two components: original capital costs and ongoing maintenance costs, including taxes. Public-private partnerships can affect the purchase price of housing, as well as operating costs (through property taxes). The use of development charges or upfront negotiated solutions tends to increase initial house prices while resulting in lower operating costs through lower taxes. On the other hand, schemes where a facility is privately built and publicly leased will tend to shift the burden from capital costs (affecting house prices) to operating costs (affecting taxes over time). The private operation of existing facilities will reduce ongoing costs while leaving capital costs unaffected. Projects which include the joint use of facilities will reduce both capital and operating costs, while turnkey design and build solutions will primarily reduce the capital cost of the project.

Generally, any partnership that reduces municipal costs can potentially reduce housing costs through lower taxes. Cost savings through joint use of facilities (Toronto and potentially Pittsburgh Township) reduce public sector costs. Private sector construction of ice centres and soccer pitches (Richmond, BC) also reduce municipal costs, although the reduction of taxes for Honda in the soccer pitch example in Richmond may actually cost the municipality more in lost revenues than it gains in reduced expenditures.

Reduced municipal expenditures on operations of a sewage or water treatment plant (Ottawa-Carleton or Sainte-Marie-de-Beauce) can also reduce ongoing housing costs through reduced taxes, although the inefficiencies of splitting the operation of the Ottawa-Carleton system may, in the long run, be more expensive than the short term gains through acquiring private sector skills and expertise. In the case of the Scarborough library, Waterloo roads and, potentially, Rockland sewage treatment, the partnerships will likely result in reduced municipal costs and reduced taxes, particularly for existing residents, but at the expense of capital costs for new residents.

BIBLIOGRAPHY

Alternative Service Delivery: Sharing Governance in Canada, Robin Ford and David Zussman, editors, (Toronto: KPMG Centre for Government Foundation and the Institute of Public Administration of Canada, 1997).

Bederman, Nolan and Michael Trebilcock. *Unsolicited Proposals for Public-Private Partnerships*, Centre for the Study of State and Market (Toronto: University of Toronto, 1996).

Durchslag, Scott, Tino Purri and Arvin Rao. "The Promise of Infrastructure Privatization" (1994), No. 1., *The McKinsey Quarterly, pages* 3-19.

Economic *Planning Advisory Commission Private Infrastructure Task Force*: Interim Report (Canberra: Australian Government Publishing Service, 1995).

Ernst, John. *Whose Utility?: The Social Impact of Public Utility Privatization and Regulation in Britain* (Buckingham, England: Open University Press, 1994).

Feldman, Roger G., Carlos J. Berrocal, Howard L. Sharfsten. "Public Finance through Privatization: Providing Infrastructure for the Future" (1987) 16 *Stetson Law Review* 705.

Goldsmith, Mayor Stephen. "How-To: Designing a Comprehensive Partnership Program", Keynote Address to the Eighth Annual Conference of the National Council for Public-Private Partnerships, Washington, D.C. (June 1994).

Goldsmith, Mayor Stephen. "Moving Municipal Services into the Marketplace", Lecture for the Carnegie Council on Privatization Project, (New York: November 1992).

Gomez-Ilbanez, Jose A. and John R. Meyer. Going Private: *The International Experience with Transportation Privatization* (Washington, D.C.: The Brookings Institute, 1993).

Goodman, John B. and Gary W. Loveman. "Does Privatization Serve the Public Interest?" *Harvard Business Review* (November/December 1991).

Government of Nova Scotia. *Strategic Public-Private Partnering: A Guide for Nova Scotia Municipalities*, Prepared under the Federal/Nova Scotia Cooperation Agreement to Promote Private Sector Participation in Municipal Infrastructure (Halifax: The Government of Nova Scotia, 1997).

Guidelines for *Infrastructure Development through Build-Operate-Transfer Projects* (Vienna: United Nations Industrial Development Organization, 1996).

Kessides, Christine. *Institutional Options for the Provision of Infrastructure* (World Bank Discussion Papers, No. 212 (The World Bank Washington, D.C., 1989).

Ministry of Municipal Affairs. *Study of Innovative Financing Approaches for Ontario Municipalities*: Final Report, prepared by Price Waterhouse, March 1993.

Mintzberg, Henry. "Managing Government, Governing Management" *Harvard Business Review* (May-June, 1996).

"New Ways of Managing Infrastructure Provision", Organization for Economic Cooperation and Development, Public Management Occasional Paper, 1994, No. 6, Market-type Mechanisms Series No. 8, OECD, Paris.

"Organizing Competition in Indianapolis: Mayor Stephen Goldsmith and the quest for Lower Costs", prepared by the Case Program, John F. Kennedy School of Government (Harvard University: 1995).

Pender, Robert B. and Frank C. Shaw. "Partnerships Offer Alternatives to Debt", *Current Municipal Problems* 17, 1990.

Price Waterhouse. *A Guide to Public-Private Partnerships in Infrastructure: Bridging the Gap Between Infrastructure Needs and Public Resources*—1994 Edition (Toronto, 1994).

Privatization and After: Monitoring and Regulation, V.V. Ramanadham, editor, (New York: Routledge, 1994).

Privatization Issue, *Journal of the American Waterworks Association*, Roger L. Kemp, editor (London: Mcfarland & Company, Inc. 1991).

"Public-Private Partnerships: Accelerating the Agenda", Conference Proceedings, staged by Canada forum, Calgary (September, 1995).

"Public-Private Partnerships: Innovation in Financing and Delivering Public Services", Proceedings of the annual conference of The Canadian Council for Public-Private Partnerships, Toronto (November, 1995).

"Public-Private Partnerships: Innovations in Structuring and Financing Public Services", Proceedings of the annual conference of The Canadian Council for Public-Private Partnerships, Toronto (November, 1994).

"Public-Private Partnerships in Infrastructure Finance and Development", Proceedings of the annual conference of The Canadian Council for Public-Private Partnerships, Toronto (November, 1993).

Rabinovitch, Jonas and Josef Leitman. "Urban Planning in Curitiba: Designing mass transit that works puts a city on the road to success", *Scientific American March*, 1996, Vol. 274, No. 3.

Raftelis, George A. *The Arthur Young Guide to Water and Wastewater Finance and Pricing*, (Chelsea, Michigan: Lewis Publishers, 1989).

Rendell, Honourable Edward G. "Privatization: It Can and Does Work", Lecture for the Carnegie Council Privatization Project, New York (January, 1994).

Rivera, Daniel. Private Sector Participation in the Water Supply and Wastewater Sector: Lessons from Six Developing Countries (The World Bank: Washington, D.C., 1996).

Rogers, I.M. *The Law of Canadian Municipal Corporations*, (Toronto: The Carswell Company Ltd., 1992).

Selby, R.F. *Leasing in Canada: A Business Guide, 2d Edition* (Butterworth Publishers: 1992).

Stainbeck, John. *Designing Comprehensive Privatization Programs for Cities* (Los Angeles: Reason Foundation, 1993).

Toronto Consultants International. *The Structuring and Financing of International Capital Projects*, prepared for Industry Canada and the Department of Foreign Affairs and International Trade, Ottawa (March, 1994).

ENDNOTES

1 Throughout this report, the term "privatization" is used interchangeably with public-private partnerships to describe the various ways in which the private sector participates in the provision and operation of infrastructure. Section 3.0 defines the terms in more detail.

2 *National Opinion Research: Results of a Study Conducted with Senior Government Decision Makers on the Prospects for Public-Private Partnerships in Canada*; the Canadian Council for Public-private partnerships; 1996.

APPENDIX A

LONG LIST OF POTENTIAL CASE STUDIES

Table A-1
Potential Case Studies[1]

Project	Privatization/Public-Private Partnership Type	Province/ State	Population	Project Value	Time Frame	Existing Case Studies
MUNICIPAL BUILDINGS						
Richmond Ice Centre	build and lease: developer to build four-rink complex on his land and lease to the City as a turnkey operation operating agreement with non-profit association, which is to return 100% of the operating costs incurred by the City associated with the operation of the arenas and the City will pay yearly lease costs	BC	149,000	$30 million capital cost City to pay lease payments of $1,022,000 plus GST per year for the first 5 years with CPI increase thereafter	25-year lease project start-up in 1993	IBI case study for CMHC, 1995
Langley Arena	design/build/finance/own/ operate land is leased to private party for nominal rate; in return the developer is required to pay development charges, property taxes, and must provide set minimum hours of ice time for public use	BC	80,000	$6 million capital cost	30-year agreement; operation start-up date of the arena was 1994	
Calgary 18-hole Golf Course and Indoor Golf Dome	design/build/finance/own/ operate	AB	768,000	capital cost of project: $2.3 M; land leased to the private partner for $25,000/year for 10 years, $35,000/year for the next 15 years and at market rates thereafter	45-year agreement agreement believed to have been entered in 1996	
Barrie Molson Centre	private party donated land, underwrote feasibility study, paved parking lot, staffs commission stands, and provides 25% of revenue to City under Letter of Understanding, private partner provides advertising, assists with security for certain events, and allows City to use parking facility for free	ON	71,000	capital cost of project: $13 million; land donated at $600,000; $300,000 invested in parking lot; $700,000 in equipment provided for food concessions	project was completed in 1995	

1 Some case studies discussed in this report have not been included in the above list (Toronto Schools; Pittsburgh Township Schools and Housing; Richmond Soccer Pitch; Ottawa-Carleton Sewage Treatment Operation; Sainte-Marie-de-Beauce Water Treatment Plant; and Waterloo Region Roads). For more information on these, please refer to Appendix B.

Table A-1
Potential Case Studies *(cont'd)*

Project	Privatization/Public-Private Partnership Type	Province/ State	Population	Project Value	Time Frame	Existing Case Studies
Centre 2000 Recreation Complex in Cape Breton Regional Municipality	operations and maintenance contract municipality to fund operating costs including capital costs, marketing and promotion	NS	115,000	capital cost: $17.6 million	preferred partner was selected in September 1996	
Scarborough Public Library	private financing of public library; land was acquired free from developer as a condition of the *Ontario Planning Act* and zoning bylaw amendment; developer also required to provide a cash contribution, in return for the land and capital contribution, the City approved a development agreement which allowed the private partner to proceed with a high density residential development on the remainder of the property	ON	508,000	$3.5 million for the building, plus $1.5 million for internal work and computer equipment	completed in 1991	IBI case study
City of Etobicoke Golf Course	design/build/finance/own/ operate private partner is responsible for all operations and maintenance; shares a percentage of gross revenues with City.	ON	310,000	capital cost: $1.75 M; lease payments range from $22,000-$55,000/year partner selection date: 1986	20 year agreement; bidding launch date 1985	
City of Ottawa Mixed Income Housing Project	private partner provides 7.5 acres of land, 30% of off-site servicing and 40% of on-site servicing costs A jointly held corporation was created by the partners, with the City holding a 60% interest.	ON	317,000	project costs for developing and servicing the site: $3.7 M; the 340 housing units represents value of $340,000	partnership agreement was entered into in 1990	
City of Montreal Public Parking Lot	purchase/own/operate; City to maintain complete authority regarding policy, regulation, rates, and collection of fees	QC	over 1 million	private partner paid the City $76.8 M for the concession and related assets service generates an annual return of $10.2 M, with additional profit sharing provisions additional profit sharing provisions	30 year agreement; project start-up in 1995	

Table A-1
Potential Case Studies *(cont'd)*

Project	Privatization/Public-Private Partnership Type	Province/ State	Population	Project Value	Time Frame	Existing Case Studies
Nova Scotia Schools	elementary school in Porters Lake, near Halifax; advanced technology school in Sydney	NS	less than 20,000	construction cost for schools: Porters Lake-$7.5 million; Sydney School-$14.3 million	1996 opening	
Portland Arena Complex	City of Portland provided $34.5 million of project equity; private sponsors were Oregon Arena Corporation; construction by Drake & Co. and Turner Construction Co.	OR	451,000	construction cost US$262 million	deal closed and construction began June 1993; was scheduled for completion in October 1995	information sourced from *PW Financing*, 1994
Anaheim Arena Stadium	30-year design/build/operate concession for a 19,200-seat sports and entertainment complex and parking facilities for 3,900 vehicles adjacent to Anaheim	CA	282,000	project cost US$103.5 million	completed in 1994	information sourced from *PW Financing*, 1994
MUNICIPAL ROAD/BRIDGES						
City of Calgary, Pedestrian Foot Bridge	finance/develop/transfer	AB	768,000	$820,000	35% of the project financing was provided by the two subdivision developers; the remainder by the provincial and municipal governments	
Charleswood Bridge, Winnipeg	design/build/finance/own/ maintain Private developer designed, built, and financed a bridge for leaseback to the municipality for 30 years, and provided the city with an option to purchase the facility at the end of the 30-year term for a fixed sum.	MB	619,000	capital cost: $10 million, graduated annual lease payments began at $800,000 and will finish at $30 M/annum in year 30	30 year agreement, under which the City to make ascending payments to private partner agreements were completed in July 1995	Canadian Council for Public-Private Partnerships *Case Studies in Public-Private Partnerships*, 1996
Red Hill Creek Expressway, Hamilton-Wentworth	public-private partnership to design/build the north-south portion of the Red Hill Creek Expressway, a 10 km road linking the QEW and Highway 403	ON	460,000			
Toll Bridge between Fargo and Moorehead	25-year BOT concession for 2-lane bridge serving about 5,500 vehicles per day	ND and MN	Fargo: 80,000 Moorehead: 33,000	Project cost: US$1.6 million	operational in 1989	information sourced from *PW Financing*, 1994

Table A-1
Potential Case Studies *(cont'd)*

Project	Privatization/Public-Private Partnership Type	Province/ State	Population	Project Value	Time Frame	Existing Case Studies
WATER AND WASTEWATER FACILITIES						
Hamilton-Wentworth Wastewater Treatment Facility	private management and operation of regional water and sewage treatment facilities; 2 contracts: 10-year contract for the management and operations of the Woodward Ave. water and wastewater treatment plants, and a renewable 2-year contract for the day-to-day operations and maintenance of the pumping stations and high lift pump at the Woodward Avenue water plant: 60 pumping stations and reservoirs	ON	over 450,000	plant operating budget (fixed and variable): $18.8 million; private partner guarantees $700,000 savings over 1994 base budget; additional savings above $1.7 million to be shared on 60/40 basis in favour of private partner (Philip Utilities Management Corporation)	agreement believed to have commenced in 1995	Canadian Council for Public-Private Partnerships *Case Studies in Public-Private Partnerships*, 1996
Moncton Water Treatment Facility	privatization/public-private partnership arrangements being negotiated	NB	59,000	N/A	current; selected USF Canada as preferred partner and entered negotiation in Apr/97	
Dartmouth Water Treatment Facility	develop/design-build/transfer	NS	56,000	N/A	current	
Cartier Water Supply System	design/build/own/operate	MB	13,000	$13 million	20-year agreement negotiated in 1997, operational in 1998	
CU Highway 14 Water Project	design/construct/own/operate water distribution system by Canadian Utilities Water Ltd.; 4 local and 2 county municipalities members	AB	less than 200,000	capital cost of pipeline was $12 million	68 km of transmission pipeline was commissioned in August 1992	IBI case study for CMHC, 1995; Price Waterhouse *Infrastructure*, Canadian Construction Association, *Innovative Infrastructure Financing: Case Study —Municipal/Regional Regional Water Supply*
Indianapolis Wastewater Plants	five-year contract for the operation of two wastewater treatment facilities, handling 250 mg/d	IN	752,000	N/A—management contract	agreement signed in 1994	information sourced from *PW Financing* 1994

Table A-1
Potential Case Studies *(cont'd)*

Project	Privatization/Public-Private Partnership Type	Province/ State	Population	Project Value	Time Frame	Existing Case Studies
Franklin Wastewater Treatment Plant	refinancing, development, operations and maintenance of the 4.5 mg/d wastewater plant; Wheelabrator will own, operate and maintain the Franklin Regional Wastewater Treatment and sludge facilities; 20-year lease for the land underlying the treatment facility.	OH	11,000	construction costs US$68 million; asset sale	buy-out in July 1994	information sourced from *PW Financing*, 1994; Canadian Council for Public Private Partnerships *Case* Studies in Public-Private *Partnerships*, 1996
Howell Township Water Treatment Plant	treatment plant for the production of potable water, along a 5.25-mile pipeline in Howell Township	NJ	42,000	Project cost: US$11.8 million	contract awarded December 1998; operational July 1990	information sources from *PW Financing*, October 1994
Rockland Park Wastewater Treatment Facility	financing, construction and operation of sewage treatment facility by Dominion Waterworks Limited and partnership with developers; plan was that at the end of 20 years, the plant would revert to municipal ownership	ON	8,000	N/A	discussion began in the early 1990s; project has been cancelled	IBI Group Case Study, 1995
Banff Wastewater Treatment Plant	operation and maintenance contract; some capital upgrades	AB	30,000 in summer; about 15,000 in winter	plant operating budget: $597,000 per annum	5-year contract (fixed and variable payments) private partner assumed operations in January 1996	
Capital Region Sewage Commission, Edmonton	operation and maintenance contract for wastewater treatment plant	AB	160,000	plant operating budget: $2.1 million per annum	5-year agreement; fixed price; shared between public-private partnership agreement entered into in April 1993	
District of Chilliwack	operations and maintenance contract	BC	64,000	plant operating budget: $301,000	5-year agreement; introduction of new technology requiring letter of credit from private partner (equivalent to one year's budget)	

Table A-1
Potential Case Studies *(cont'd)*

Project	Privatization/Public-Private Partnership Type	Province/ State	Population	Project Value	Time Frame	Existing Case Studies
Town of Listowel Wastewater Treatment Plant	operations and maintenance contract	ON	6,000	plant operating budget: $336,000/annum (avg) during life of agreement	5-year agreement; Philips Utility paid an ascending fixed fee for service agreement appears to have commenced in 1996 system began operations in July 1996	
Town of Petrolia Wastewater Treatment Plant	operations and maintenance contract; also capital upgrades	ON	5,000	plant operating budget: $230,000/annum	4-year agreement; Town pays a fixed fee, a portion of which is kept aside for capital work private partner began operations in Mar/96	
City of Prince Albert Wastewater Treatment System	design/build/finance/operate	SK	35,000	capital and operating budget: confidential	following one year trial period, if the system meets promised standards, City will purchase wastewater treatment plant and private partner will continue to operate; City will share in revenues from future sales project dates to be determined	
Town of Wakaw Regional Water Supply System	design/build/finance/operate	SK	less than 1,000	project capital cost: $32 million	30-year contract, with water to be provided at a guaranteed rate for the first five years; subject to negotiation thereafter	
City of Winnipeg Oxygen Generating Facility	design/build/finance/own/operate City provides power in exchange for plant operation and routine maintenance	MB	618,000	project capital cost (1984) $8 million	15-year agreement; fixed fee for capital and maintenance; variable fee for oxygen; plant was operational in 1984	
SOLID WASTE FACILITIES						
Sarnia-Lambton	25-year contract between the County of Lambton and Philip Environmental for waste management including waste collection, recycling, and landfill operation	ON	122,000	$150 million in revenue for Philip Environmental over the 25-year duration of the contract Waste management agreement signed on July 12, 1995	25 years	

Table A-1
Potential Case Studies *(cont'd)*

Project	Privatization/Public-Private Partnership Type	Province/ State	Population	Project Value	Time Frame	Existing Case Studies
City of Etobicoke	contract for municipal waste collection	ON	300,000	N/A—management contract	1995	
Cumberland District Planning Commission Solid Waste Management	esign/construction/permitting/ doperation of landfill site; waste transportation	NS	115,000	project capital cost: $9.4 million; haulage costs/tonne: $55	10-year agreement: private partner to operate landfill and provide garbage collection; responsible for servicing capital debt on landfill contract was signed in June 1996	
Westmorland-Albert County Solid Waste Management, Corp: Solid Waste Sorting, Recycling and Composting Facility	design/build/finance/own/ operate	NB	less than 100,000	capital cost of facility: $18 million; paid $39/tonne (1992) on an estimated volume of 120,000 tonnes of waste	20-year agreement: private partner required to achieve 50% reduction/diversion in waste, upon completion of contract, all facilities revert to the Corporation a master agreement was entered into in July 1994; facility was completed in December 1995	
Regional Municipality of Halton Recycling Facility	design/build/finance/own/operate	ON	316,000	Region pays private partner $14.93/tonne on average volume of 25,000 tonnes/year	5-year contract; fixed fee per tonne of material processed, revenue on sale of recycled material split 75/25 in private partner's favour	
County of Northumberland, Material Recovery Facility	design/build/transfer/operate	ON	75,000	capital cost of the facility: $6.8 million; operating contract is $1.5 million/annum	5-year agreement; price paid per tonne, varying by volume; different rate charged for residential and ICI waste private partner recently terminated negotiations	

APPENDIX B

CASE STUDIES

1. TORONTO SCHOOLS

Municipality: Toronto, Ontario

Private sector partner: Non-private partnership, joint funding and operation of school facilities in conjunction with co-op housing and municipal community centre.

Nature of partnership: Joint design, build and operate.

Service provided: Education.

Why did municipality seek partnership?: Reduce school costs; make efficient use of land, and share facilities.

Was partnership successful?: Schools and housing built; facilities shared; and land requirements reduced.

How was housing partner selected?: Proposed housing developments.

Why did housing sector get involved?: Need for provision of schools to permit residential development to proceed.

Savings and/or accelerated activities: Facilities shared between school boards and municipality, and schools provided with minimal land requirements.

Downside: Maintenance disagreements, insufficient play area.

Impact on housing: Housing built that could not have been constructed if schooling were not made available. Sharing of facilities results in both lower capital and lower operating costs.

Lessons learned: Great care must be exercised in drawing up the original maintenance and operating agreements.

Contact: Mr. Norbert Hartman
Controller of Plant and Planning
Toronto Board of Education
155 College Street
Toronto ON M5T 1P6

1.1 St. Lawrence Housing Development

On September 9, 1977, an agreement was signed by the Minister of Education for the Province of Ontario, the Chairman of the Metropolitan Toronto School Board, the Chairman of the Metropolitan Separate School Board, and the Chairman of the City of Toronto Board of Education to provide for a mixed use housing and joint school board development in the St. Lawrence neighbourhood in Toronto. In Metropolitan Toronto there are both public and separate boards of education. The public board comprises local boards of education in each of the six municipalities of Metropolitan Toronto plus a French language board. The Metropolitan Toronto School Board is responsible for the capital funding of new schools, while the municipal boards are responsible for the operation of the schools and the provision of the necessary teachers and supplies.

The first school in the new St. Lawrence development was designed as part of a mixed use building and was housed on part of the first and second floors of an eight storey building. The remainder of the ground floor was used for commercial purposes, and the upper floors were occupied by a non-profit housing development. The school was designed to accommodate both the Metropolitan Separate School Board and the Toronto Board of Education. Classrooms and ancillary spaces for the two Boards were provided on opposite sides of twin general purpose rooms which are separated by a folding door. The combined space of 4,000 ft² can be used for school or community purposes. Outdoor play space (which in the case of the first Market Lane school in the St. Lawrence project was less than an acre in size) was owned and maintained by the

City of Toronto, while the two School Boards shared in the overall development and construction cost of the facility.

The two schools housed in the facility were Market Lane and St. Michael's. Because the schools were constructed in the first phase of the development and because they contained general purpose rooms which could be used for community purposes, the schools quickly became the focal point for the community. Moreover, by being constructed adjacent to (and under) residential units, a measure of informal, after-hours security was provided to the school.

However, there were certain problems that developed from this first development. The sharing of one building with other users makes it very difficult to phase and to expand school activities. Portables or other temporary accommodation cannot readily be located adjacent to the school. The mechanical and electrical systems for the entire building were common and difficulties ensued with regard to assigning responsibility and costs for the maintenance of these facilities. Each of the operating partners had different unions who were responsible for different parts of the facility and disagreements arose as to who was responsible when breakdowns occurred. The question of liability for accidents and other occurrences in mixed use facilities was not clearly resolved. Is a leak through the roof of the school the responsibility of the Board of Education or of the housing development above? The coordination of the architects and the design consultants between the various users was difficult since there are different fire code requirements for schools than for residential buildings. Also, separate fire escapes were required for each of the activities.

1.2 Second St. Lawrence School

At a later date, a new Market Lane school was constructed in St. Lawrence for the Toronto Board of Education's uses. Mindful of its experiences in the first Market Lane school, the Board of Education wished to avoid the stacking of ownerships one above the other. Thus, the new school is constructed adjacent to a community centre which has been provided by the City of Toronto, with an older, converted office building on the other side of the school. This community centre itself is partially built into the ground floor of the adjacent residential building. The City and the Board of Education share use of the swimming pool, gymnasium and general purpose rooms, however, each facility has its own change rooms on either side of the shared facility. The Board is allocated the use of the shared facilities at certain times of the day, during which time the community centre access is restricted, and at other times the common facilities are used by the community centre and access is restricted to the school property.

Given the location of the school on the north side of The Esplanade, a local street, and Crombie Park on the south side, a tunnel was required under the road to permit the school to utilize the park space as the school's play area. While students may cross the street unsupervised going to and from school, it was concluded that for liability, safety and supervision reasons, the children should not have to cross the street during the school day. In both the new Market Lane school and the first joint Market Lane/St. Michael's school, the amount of land area allocated to play space was significantly less than the amount usually considered for suburban schools.

A further example of efficient use of land and building space is the Humberwood School complex in Etobicoke. This is a joint facility housing the Etobicoke Board of Education, the Separate School Board, and a city library and recreation facility. It is planned to operate as a shared use corporation where all of the users are tenants of the facility and the facility itself is run by a six-person board, two persons from each of the users. This board hires a general manager to manage the entire facility.

The other experience learned by the Toronto School Board, and applied in the new Market Lane school, was to ensure that all aspects of the operation and maintenance of joint facilities are

spelled out in a detailed maintenance agreement. The various entities are looked upon as separate "silos", i.e. buildings on their own piece of land and independent of other structures. Facilities which are to be shared between silos then must be the subject of detailed agreements specifying not only maintenance and liability, but also who can use the facilities for what purposes and at what times. In the first Market Lane school, many of these matters were not addressed in the agreements and, in fact, the agreements were never signed and the maintenance and operation therefore depended upon the good will of the individuals involved. Unfortunately, over time these individuals became subject to the institutional policies of the various bodies and some of the agreements and cooperation broke down. There are still ongoing maintenance difficulties which have yet to be worked out between the Board of Education and the housing development above.

1.3 A North York Example

Another and somewhat different example of shared education accommodation in Toronto was an agreement reached between Tridel, a developer of condominium apartments, and the Metropolitan Separate School Board in North York. In that instance, the School Board owned an elementary school which was obsolete and needed to be rebuilt. The original family community had dwindled as the area around Sheppard and Yonge became the office-oriented "North York Downtown," but the Separate Board required an arts-oriented school, the Cardinal Carter Academy for the Arts, to accommodate students from grade 7 to post high school courses. The Separate Board asked for proposals and Tridel's concept was eventually accepted. Tridel acquired the site from the School Board, transferred the development rights onto an adjacent piece of land they owned, constructed a school at their cost, and transferred the school plus some additional land with no density rights on it back to the school, and built a 33 storey residential condominium on the adjacent land. The school extends 2 1/2 storeys below grade and 1 1/2 storeys above, but has natural light to all levels. A separate heating plant is provided for the school. The school was designed by an architect retained by the Separate School Board but paid for by the developer.

1.4 Plans For Ataratiri

With the knowledge gained from these and other experiences in Toronto, the Toronto Board of Education worked with the City of Toronto on the design for schools in the proposed but never built Ataratiri housing development in the east end of Toronto. Many schemes were looked at for schools in the project, and these were judged on the basis of ease of phasing and expansion, the location and amount of open space and safety. The Humberwood project in Etobicoke had demonstrated that lunch rooms and general purpose rooms can be shared and rearranged to form either one large area or several small areas; outdoor kindergarten play areas can be shared between schools; a unified arts room, a music room, senior science rooms, industrial arts and family studies rooms can be shared by different boards on a timetable and booking basis; and access can be controlled between the schools and the adjacent library and community centre.

The final design for the school in Ataratiri included free-standing school buildings to provide for individual identity, ease of vertical or horizontal expansion, simple unambiguous maintenance and security arrangements, and phasing according to the School Boards' timelines. Parking was to be located underground to free up surface site areas for other uses; space was identified adjacent to the schools for the location of portable classrooms, unlike the situation in the first school in St. Lawrence where the portables are located several blocks away. Hard surface play areas were to be provided for each school and separate entrances provided for both kindergarten and primary students. Play fields were to be shared between schools and with the City's recreational centre on a timetable basis, general purpose rooms were to be used between schools, and enclosed links to the community centre were to provide equal and ali-season access to the community centre facilities. Adjacent residential buildings would have

grade-related open space in order to provide for observation onto the school yards in the non-school hours.

One of the philosophies guiding the Board of Education in Toronto is that the school should be a focus for the community around it. Thus, the school is located in the centre of the community and community facilities, community recreational activities and libraries are located adjacent to the school to both reinforce the focal point and to provide opportunities for sharing of facilities between the municipality and the Board.

1.5 The Railway Lands

Although the Ataratiri project was cancelled, the design experience gained from it assisted in the development of a scheme to provide two schools, a community centre and associated park space and play fields in the CN Railway Lands development. The City of Toronto, CN Real Estate, the Toronto Board of Education and the Metropolitan Separate School Board recently concluded an agreement to provide the required facilities based on an estimate of the number of students in the housing to be built on the CN lands. These students will account for approximately 70% of the capacity of a neighbourhood school. CN will pay a development levy at the time of obtaining building permits which will, in total, account for 70% of the cost of the school. This levy for educational purposes is specific to the CN development as the School Boards in Metropolitan Toronto do not have education development charge by-laws and the City of Toronto's development charges were waived until 1995. Should educational or municipal development charges be introduced in the future, CN lands would be exempt.

The developer pays the levies for the cost of the school as development proceeds and this money is accumulated by the Boards of Education. Before a school is built, the School Boards are responsible for the bussing costs to transport students to existing schools in the area. Not only will the School Boards benefit from this charge, but so will the Province. The Metropolitan Toronto School Board is responsible for funding the construction of public schools and receives no provincial funding. However, the Metropolitan Separate School Board normally receives a provincial grant of between 40% and 60% of the cost of new school construction. With CN paying for 70% of the cost of the school on its land and the other 30% being charged to a neighbouring developer, the Province is not required in this instance to contribute its normal amount to the construction of the separate school.

When built, the school will form part of a joint community centre, swimming pool, day-care and educational facility. This joint use of common facilities, such as meeting rooms, cafeteria, gymnasium and ancillary rooms, will save about 18% of the total school floor space that otherwise would have to be constructed in stand-alone facilities. A public library, also paid for by the developer through a building permit time levy, will be adjacent. The land on which these will be built is owned by the City (donated by the developer). While the land is City owned, the school buildings, when constructed, will be owned by the School Boards. The City of Toronto can, if it wishes, build the recreational facilities and/or the library before the construction of the schools. The actual construction of the schools will be dependent upon the number of students generated by the new development. There is a guarantee in the agreement that the school will be built by the time that 95% of the total projected school population has been generated by the new development. Should a school not be built after the 95% development level has been reached, all of the funds paid by CN will be reimbursed.

The development levy that is set to build the Railway Lands' school will be indexed to the general increase in construction costs. The detailed agreements between the City and the two Boards of Education will not involve the developer. Once the agreement is in place, the detailed negotiations regarding the timing and phasing of construction and the integration of the various facilities amongst the users of the building is not the responsibility of the developer. The

developer is responsible for the hard infrastructure costs, while questions of timing, programming, use of facilities, responsibility for operating costs and the programs provided are the responsibility of the public agencies. Having paid the money for the hard costs, the developer is assured that a school will be built to serve the residents of the new community and, if it is not built, that the charges will be reimbursed. Under a city-wide development charge by-law, no developer is guaranteed that facilities will, in fact, be built in a location and at a time which will benefit the community or development which provided the development charge funds.

1.6 Conclusion

None of the arrangements discussed above involve construction of a school by a private sector firm. However, in arriving at the cost of the school in the CN lands to be covered by the development charges, the developer was able to point out procedures that reduced the construction cost from $\$103/ft^2$ as originally estimated by the School Board, to $\$90/ft^2$. In another jurisdiction, the Region of Peel (immediately west of Metropolitan Toronto), where school funding is an even greater problem than in Metropolitan Toronto, a developer had estimated that he could build a new secondary school for about $\$100/ft^2$, while the Peel Board of Education has indicated that its costs at the present time run from $\$100$-$\$120/ft^2$. Also, none of the agreements entered into to date by the Boards of Education in Toronto and adjacent areas have included a developer operating and/or maintaining a school facility. These areas may prove fruitful for further investigation as a means of reducing the overall costs of providing educational facilities.

2. PITTSBURGH TOWNSHIP—SCHOOLS AND HOUSING

Municipality: Pittsburgh Township, Ontario

Private sector partner: Daycon Corp.

Public sector partner: Frontenac, Lennox and Addington Roman Catholic Separate School Board.

Nature of partnership: Joint construction of community centre, separate school and seniors housing.

Service provided: Education and recreation.

Why did municipality seek partnership?: Reduce capital costs of constructing a community centre.

Was the partnership successful?: Project has not proceeded. Stand-alone school under construction. No community centre.

How was private partner selected?: Developer had access to land with subdivision approval for a school site.

Why did private sector get involved?: Ability to add a senior citizens housing development and to undertake the construction of the project.

Cost savings: Were to have been through joint construction and joint use of a school and a recreation centre.

Downsides: Project involved sole sourcing and negotiations instead of the more normal open tendering process.

Impact on housing: Additional senior citizens housing units would have been constructed. Sharing of educational and municipal facilities would result in lower capital and operating costs.

Lessons learned: All parties must go into such a project with a clear understanding of what benefits are being sought and what costs are involved.

Contact: Mr. Jim Miller
Commissioner of Planning
Township of Pittsburgh
Box 966, 900 McLean Court
Kingston ON K7L 4X8

Mr. Charles Jefferies
Superintendent: Physical Facilities
Frontenac, Lennox and Addington Roman Catholic Separate School Board
84 Stephen Street, P.O. Box 1058
Kingston ON K7L 4Y5

2.1 Introduction

The proposal was described by Nancy Bardecki, the Director of the Municipal Finance Branch of the Ontario Ministry of Municipal Affairs, in her paper: *Current Provincial and Industry Initiatives*. The project was to include a municipal community centre, with recreational and day-care facilities, a senior citizens housing building, and an elementary separate school. The construction was to take place on a piece of land in a subdivision which had been set aside for school purposes.

2.2 The Proposal

The project originated in 1991 when the Township of Pittsburgh began to look for a site for a new recreation centre/community centre complex. At the same time, the Separate School Board was looking for a site for a new school and the two jurisdictions began to discuss a joint facility that would allow the sharing of kitchen facilities, craft shops, gymnasium and meeting rooms. In addition, the school auditorium and library could also be shared with students using the facilities in the day time and the general community utilizing the auditorium as a municipal hall and recreation area in the evening and on weekends.

As the discussions took place, the Planning Department began to float the idea of introducing

a senior citizen housing component as part of the development. It was felt that the seniors would be able to take advantage of the facilities in the community centre, auditorium and library, while at the same time the presence of residential units would provide a type of informal security and a 24-hour presence on the site.

A local developer, Daycon Corp., had access to land with a draft approved plan of subdivision which contained a block set aside for a school. He approached the City with the suggestion that this site would be the ideal location for such a joint use project. Moreover, his firm had constructed seniors accommodation elsewhere, was a general residential, commercial and institutional builder, and was anxious to construct the entire project and maintain the seniors housing development The design solution that was suggested was one which contained a community centre located between a school and a seniors housing building.

Discussions also took place regarding the financing of the undertaking. One suggestion was that the developer build the facilities and then lease back both the community centre and the school to the respective public bodies. If this were not feasible, the construction could be on a negotiated cost basis with the School Board and the municipality providing the upfront capital financing. In any case, the sharing of facilities and space, as well as the land area, would permit both the School Board and the municipality to have lower capital costs of construction. Furthermore, with a single design and with construction facilities taking place at the same time, it was felt that there would be savings in both architectural and construction costs. The residential units could either be run as a private sector facility or as non-profit housing.

The School Board was interested in such an undertaking. The provision of central heating and the sharing of parking spaces and some of the recreational facilities could result in a cost savings for the School Board. The developer was interested in designing and building not only the seniors housing and the community centre, but also the school itself. His proposal was that the cost of the school would be less than if the School Board were to construct the school on its own.

Apparently, the staff at the Ontario Ministry of Education were, at first, somewhat reluctant to approve such a mixed use project with no public tendering process. The discussions regarding a building and leasing back arrangement proved not to be fruitful, but a turnkey project with a predetermined price was acceptable.

According to Mr. Jim Miller, the Commissioner of Planning for Pittsburgh Township, such a mixed use project did not fit into the normal procedures of the Ministry of Education and it was necessary for the Township to persevere up the Ministry of Education hierarchy in order to gain approval for the scheme. Eventually, the Ministry, which is responsible for most of the capital funds for such a project, agreed with the concept.

2.3 The Results

Near the end of 1992, however, the project began to come apart. The School Board began to develop concerns about the non-traditional way that this project was proceeding. It has been the School Board's practice in the past to use an open tender process to obtain the architect and builder of school buildings. The joint use project being considered, however, involved a quite different approach: the developer/builder was already involved due to land ownership and negotiations were then ongoing regarding the cost of the facility and its design. Some lobbying began to take place with School Board members suggesting that they should not proceed with a project that was not open to tender.

From the standpoint of the developer, he would have to guarantee a fixed price for the construction of the building. He wished to keep confidential the various techniques that he would employ to bring the project in at or under budget. He became nervous that the School Board officials would not be able to keep confidential the information that they learned concerning his

development techniques. Moreover, as is often the case in such partnerships, some concern was raised regarding the amount of profit that the developer would make from his involvement in such a negotiated process.

Other problems arose that affected the acceptability of this mixed use project. With a variety of users of the site, the School Board would not be as able to control access to the site and this led to a concern for safety of the children. News reports of access problems at other schools in metropolitan areas did not allay these concerns.

Difficulty was also encountered in pulling together the financial side of the negotiations. Mr. Charles Jefferies, the School Board's Superintendent of Physical Facilities, feels that all of the participants may have started the process with unrealistic expectations of the extent of cost savings. In his view, it would be better in these types of partnerships to accept that costs may not be reduced significantly, but that the benefits arise because of access to use a greatly expanded set of facilities. On the other hand, the downside to gaining use of facilities provided by others is the need to surrender some sovereignty over one's own facilities. This awareness of both the lack of major cost savings and the loss of control came late in the negotiation process and led to some cooling of support for the whole project.

Another difficulty with such partnerships is the time involved in putting the project together. Until such time as successful models are produced elsewhere in Ontario, each partnership project will have to go through a very time consuming process of determining costs, responsibilities, liabilities, maintenance agreements, use agreements, etc., and those increase the overall time as compared to a more conventional stand-alone project. In the case of Pittsburgh Township, the School Board had determined that the school had to be available in September 1995. As negotiations dragged on and enthusiasm cooled, they eventually had to decide to exit the project and implement a more traditional design, tender, and build procedure in order to ensure that the September 1995 deadline would be met.

Eventually, the project fell apart—the Separate School Board acquired the land from the developer, an architect was retained in the traditional manner, a tender call process was employed, and at the present time a traditional stand-alone elementary school is under construction in Pittsburgh Township. There is no seniors housing being provided, and there is no community centre. Some of the recreational facilities in the school can be used by the public as a result of an agreement that the Planning Department was able to obtain during the site plan negotiations. However, the municipality is still looking for a site in this part of Pittsburgh Township for a community and recreation centre.

2.4 Comments

Embarking on a public-private partnership entails the use of non-usual procedures. A certain amount of negotiation must take place and all of the partners must be realistic about the costs and benefits.

The difficulty in Pittsburgh Township was that there was no competitive bid so that cost comparisons were not possible. The private sector partner, in this instance, would have been self-selected as he not only owned the land, but was also in the business of designing and constructing buildings. Even if the final cost to the School Board and to the municipality for their facilities was less than they would normally have had to pay for separate stand-alone structures, there would have remained a concern that the public bodies were conferring a major financial benefit on one particular landowner.

Timing is critical as negotiating more complex agreements takes more time than traditional stand-alone projects. To avoid disappointments creeping in during the process, sufficient time must be available to resolve conflicts and all partners must be clear, upfront, as to what benefits each hopes to achieve from the partnership and what costs or difficulties each is prepared to pay to gain those benefits.

3. RICHMOND ICE CENTRE

Municipality: Richmond, British Columbia

Private sector partner: Riverside Business Park Incorporated.

Nature of partnership: Build and lease.

Service provided: Municipal arena.

Why did municipality seek partnership?: Needed to build an arena but lacked land and money.

Was partnership successful?: Arena built and being operating by the City.

How was private partner selected?: Landowner targeted the City as a potential client.

Why did private sector get involved?: Arena would attract tenants to adjacent industrial land owned by the private sector partner.

Savings: City did not have to use city-owned land, no upfront capital costs, arena built five years sooner, and with twice the capacity.

Downside: At end of lease, City may lose access.

Impact on housing: Reduces need for upfront capital (lowers development related charges), but replaces this by an ongoing tax-supported lease cost.

Lessons learned: Need to respect differences in value base between public and private sectors (need to look at both sides); should decide beforehand which principles and practices are not negotiable and which might be; need to be able to react at a much faster speed than usual for government; need for openness to new ideas and operational models; should define "City standards" in facility design beforehand.

Contact:

Ms. Jane Fernyhough
Coordinator, Special Projects
City of Richmond
6911 No. 3 Road
Richmond BC V6Y 2C1

Mr. Brent Kerr
Riverport Business Park Inc.
100-12151 Horseshoe Way
Richmond BC V7A 4V4

3.1 Background

In January 1993, City Council adopted a report from the City-Wide Facility Task Force (made up of community members, City Councillors, and staff) that the first priority for new recreation facilities in the city was an aquatic/arena complex and that a referendum should be held in the fall of 1993 requesting permission from the electorate to borrow the money necessary to build such a complex. The complex was to house an aquatic centre and two ice surfaces with capacity to be expanded to four ice surfaces should demand dictate in the future.

One of the dilemmas for Council was where to locate the proposed facility since the land needed for the original complex plus expansion and parking was approximately 14 acres. Another was the $30 million price tag and voters' growing displeasure with increased taxes.

Several proposals had been received previously from private companies proposing to build ice arenas in the city, always using City-owned land. The proposals included private sector operation and a guaranteed amount of ice time leased by the City for youth sports. However, in June of 1993, as the City was preparing for the fall referendum, Riverside Business Park Inc. approached the City with a different proposal.

3.2 The Solution

The developer owned a large tract (35 acres) of industrially zoned land in the eastern part of the city. He wanted an anchor tenant that would help attract other tenants to the proposed Business Park. He would build, to city standards, a four-rink complex on his land, and lease it to the City as a turnkey operation. The City had the option to sublease to a community organization.

The facility would contain four ice surfaces, four team rooms, two change rooms per rink, concession area, skate rental and skate sharpening area, pro shop, administrative offices, first aid room, public washrooms, bleacher seating for 480 people, and a pub and viewing lounge for 200. In return, the developer asked for lease payments of $1,022,000 (plus GST) per year from the City for the first five years with increases linked to changes in the consumer price index thereafter, and a twenty-five-year lease. Upon agreement by Council and a signed lease of ten years, a referendum was held to gain voter approval to enter into a twenty-five-year lease, and this was approved.

The City gained a much needed ice arena at least five years earlier than if the City had built the facility and an increase of two ice surfaces over what was originally proposed. In addition, they did not have to use city property in order to build it.

3.3 Operating Agreement

The City has set up an operating agreement with a non-profit association, the Richmond Arenas Community Association, to operate the new complex and an older arena complex with two ice surfaces. The agreement is for the Association to return to the City 100% of the costs and expenses incurred by the City associated with the operation of the arenas, and the City will pay the yearly lease costs. The Association will retain the first $25,000 in net profit annually, and any profit above that will be split 25% to the Association and 75% to the City. The City's portion will be put into a replacement facility fund so that at the end of the lease the City could have the money to build a new facility, or buy the existing one, or continue to lease it.

3.4 Principles

In order for the Arenas Association to return 100% of the operating costs incurred by the City, the focus for the community group changed from one of primarily service to one of primarily revenue generation. The major changes to past revenue practices include increased user fees, liquor sales, and advertising.

From a City point of view, several principles were compromised: City ownership of public facilities and public process in facility design (although indirectly all of the arena user groups had significant input into the details of the design). There were principles that were deemed important to conserve: physical accessibility requirements, and the ability to have a community organization actually operate the facility. Both of these were maintained in this agreement.

3.5 Comments

The City has gained four much needed sheets of ice on privately owned land with no capital costs. The developer has gained an anchor tenant for his business park with a guaranteed twenty-five-year lease. Financial projections show it is a beneficial arrangement for both parties.

From its experience, the City would recommend that any municipality contemplating such an arrangement should hire a project manager to spend time, before the deal is signed to clarify details, expectations, etc., and on ongoing details during project development. This would minimize the amount of retrofitting necessary following construction. For this project, the "project managing" fell to the current Arena Coordinator, who had to do it along with his regular full-time duties. Hiring of the architect should ideally be done jointly. In this project, the developer's regular architect was used with apparent little experience with arenas.

The timing of this project was good: it was built quickly in a time of need. The demand for ice time was growing and the new facility could meet the need. Also, it was built and operating before other communities built new facilities, so this arena could capitalize financially on a lack of ice time in surrounding municipalities.

The developer was a willing, amenable partner. First, he had approached the City for the project. Secondly, his objective was greater than just building the arena. He gained an anchor tenant, on a guaranteed long-term lease, for his business park with which to attract other tenants.

4. RICHMOND SOCCER PITCH

Municipality: Richmond, British Columbia

Private sector partner: Honda Corporation of Canada.

Nature of partnership: Build and operate.

Services provided: Soccer pitch and play field.

Why did municipality seek partnership?: Municipality needed more soccer pitches to accommodate growing population in a specific area.

Was partnership successful?: Soccer pitch, play field and ball diamond provided.

How was private partner selected?: Owned the land.

Why did private sector partner get involved?: Wanted to provide recreational opportunities for employees and pay lower taxes on land until needed for business expansion.

Savings: Construction costs of approximately $135,000 (1984), no land costs during period of use.

Downside: None to date. When Honda requires the land to expand, the loss of one all-weather sand field will pose some adjustments for scheduling. However, this field will have served the community during a period of growth in participation. The City has increased its component of sand fields and the loss of one field could be overcome.

Impact on housing: Reduces need for upfront capital, but replaces this by less annual tax receipts.

Lessons learned: Cost analysis of the options available for such arrangements need to be done early in the negotiation stage; need to be clear on what the objectives are before proceeding to in-depth negotiations.

Contact: Ms. Jane Fernyhough
Coordinator, Special Projects City of Richmond
6911 No. 3 Road
Richmond BC V6Y 2C1

4.1 Background

At the opening of a new Honda warehouse complex in the spring of 1984, the owner mentioned to the Mayor that they were planning to build a soccer pitch for the use of their employees on a portion of their site and perhaps there was an opportunity to gain some community use from it.

4.2 Negotiated Solution

The area is located in a warehouse area of the city, away from residential neighbourhoods. The initial proposal from Honda to provide a regular grass soccer pitch on 2.62 acres of land was of no interest to the City as it would become unplayable during the winter months. After negotiation, the company agreed to install an all-weather sand field, complete with drainage and irrigation, at a cost to them of approximately $135,000. The City agreed to assume all maintenance costs (approximately $6,000 per year), and liability for community use, allocate the field to community groups on the same basis as other facilities (but giving Honda employees first priority), and support a reassessment of the property for tax purposes from "industrial" to "seasonal recreational". Subsequent discussions resulted in an additional 3.63 acres being put into a practice play field and a ball diamond which the City also maintains and allocates. The agreement can be cancelled upon 90 days notice by either party. It should be noted that the City received full development fees on the warehouse development resulting in no loss to the City for park land acquisition.

4.3 Total Contribution and Benefits

The total cost to the company was approximately $135,000 to build the fields. In return, it received a tax break (approximately $17,000 per year in 1984) on a parcel of land that they are saving for future expansion, as well as the good will that goes with good corporate citizenship.

The cost to the City is the cost of maintenance (approximately $6,000 per year), and the loss of tax revenue. In return, the City has had the use of an all-weather sand field, practice field and a ball diamond since 1985 on property they do not own and for which they did not pay capital costs. The field was built during a period of rapid residential growth within the community and specifically growth in participation in soccer, and a time when the City was unable to build facilities in the area at a pace that would accommodate this growth. During the past several years, the City has built a number of all-weather soccer pitches. If Honda gave notice of reclaiming the land, the loss of a field, while it would pose some difficulties, could be accommodated.

As a result of this project, another company, Delf, entered into a similar arrangement building a play field, two tennis courts, and parking stalls. The cost to Delf was approximately $60,000. Since it was adjacent to the Honda facilities, the maintenance costs for the new facilities were minimized.

4.4 Conclusion

The facilities are located in an area of the city away from residential units making them ideal for adult level play and available for the use of workers. At the same time, they provide some community facilities for the growing residential community adjacent to the industrial area which, until recently, could not be provided by the City.

These two projects were of tremendous benefit to an area of the city which was poorly served in terms of outdoor play fields and tennis courts. This partnership allowed the City, at very little expense, to provide residents in the area with these facilities, while the City acquires land elsewhere over time to create permanent public amenities.

Cost analysis of the options available for such arrangements needs to be done early in the negotiation stage. In this case, the City could have asked Honda to absorb the costs of both building and maintaining the play fields as the tax savings over the past ten years of the agreement would have easily covered both costs.

5. ALBERTA HIGHWAY 14 WATER DISTRIBUTION PROJECT

Municipalities: Towns of Tofield and Viking; Villages of Ryley and Holden; and Counties of Strathcona and Beaver, with membership on Highway 14 Regional Water Services Commission.

Private sector partner: CU (Canadian Utilities) Water Ltd.

Nature of partnership: Design, construct, own and operate.

Service: Water supply system.

Why did municipality seek partnership?: Debt burden on municipalities too large in order to provide improved water quality and assured supply.

Was partnership successful?: Following two years of negotiations and three months of construction, 68 km of transmission pipeline was commissioned in August 1992.

How was partner selected?: CU Water Ltd. made proposal to Commission.

Why did private sector partner get involved?: Private partner has 80-year history in natural gas production and distribution and in electrical power generation and distribution; the skills and systems are transferable to the supply and distribution of piped, potable water; and Canadian Utilities (parent firm) owns right-of-way from Edmonton to Viking.

Savings and/or accelerated activities: Municipalities could not have managed the debt load either alone or together. Having a high quality and dependable water supply makes future residential or commercial/industrial development feasible/attractive.

Downsides: Water costs are double previous rates (but water quality and availability are benefits). Water rates in adjacent areas are 40% to 60% less where provincial capital grants funded all/most of the systems.

Impact on housing: Area with long-term availability of housing and more attractive to potential house buyers due to provided essential services. To the extent that least-cost solutions are found, they will make housing more affordable than it would otherwise be. Limits to growth due to inadequate water supply have been eliminated. Reduced municipal upfront capital requirements, while increasing ongoing water supply costs.

Lessons learned: Municipalities can be faced with serious problems (e.g. imminent water plant failure) which, to be overcome, will mean a significant increase in the cost of providing services. In this case, the proper cost comparison is not of historical costs, but to the cost of future options. Regional supply of water services provides cost savings from economies of scale, feasibility of undertaking may lie in a strategic advantage (in this case, the private partner owned the right-of-way, avoiding costly and protracted efforts to obtain easements). Some public sector financing is likely to be necessary, even with private capital, to make the project economically viable for the private partner. Problems are often unique to a municipality. This emphasizes the need for the public sector to be innovative when identifying options.

Contact: Mr. Steve Lee
Deputy County Engineer
Public Works Dept. County of Strathcona
2016 Sherwood Drive
Sherwood Park AB T8A 3X3

This project was previously described in a conference paper: *Highway 14—A Case History* presented by Suzanne Bowden, Canadian Utilities Ltd., undated; Infrastructure, Price Waterhouse Jan. 1993, No. 2; and *Innovative Infrastructure Financing: Case Study Municipal/Regional Water*

Supply, Canadian Construction Association, undated.

5.1 Water Supply and Quality Problems

Several communities in the Highway 14 area east of Edmonton had experienced water supply and/or quality problems. For example, the Town of Tofield's water treatment plant was significantly outdated: it required major upgrading in order to meet safe drinking water standards. The Village of Ryley faced serious water shortages and quality problems in that the raw water source was contaminated by agricultural infiltration. Throughout the area, country residential subdivisions and farm residences experienced very poor quality water from wells.

The local governments of six municipalities: the Counties of Strathcona and Beaver, the Towns of Tofield and Viking, and the Villages of Ryley and Holden, had been in discussions for several years regarding the formation of a regional water commission and established the Highway 14 Regional Water Services Commission in July 1990. This Commission was formed to spearhead the initiative of finding a reliable source of potable water. Consideration was initially given to construction of a water plant at Tofield and an upgrade to the water plants at Ryley, however the costs were high (about $5 million for a new water treatment plant for Tofield), and finding a secure source of potable water to these plants was not certain. The Commission concluded that a pipeline to Edmonton was the only secure source of potable water, and explored the possibility of constructing it as a public initiative. However, two major obstacles were identified: the need to obtain a right-of-way (which would require substantial time in property negotiations) and very high capital costs (which would lead to a debt load which was beyond the carrying capacity of these municipalities).

There were concerns that local opposition would be encountered from residents not in the immediate vicinity of the pipeline who would not be beneficiaries of the new service.

5.2 Supply and Distribution Solution

The solution evolved over a two-year period as costs and physical constraints came into focus. The solution was a Design-Construct-Own-Operate and Maintain Partnership with CU Water Limited, where the private partner was responsible for $7.1 million, and $4.9 million was provided by the Province of Alberta to the municipalities of the Commission. The private partner designs, constructs, owns, operates, and maintains the 68 km pipeline from Edmonton for a 25-year period, having exclusive distribution rights for a defined area. The Commission is entitled to buy back the system at net book value at years 15, 20 or 25 of the agreement, with a 5-year notice period. Canadian Utilities approached both the Government of Alberta and the Highway 14 Regional Water Services Commission to seek permission for CU Water Ltd. to undertake the project to supply and distribute water. Canadian Utilities has an 80-year history in Alberta in natural gas production and distribution and in electrical power generation and distribution. The company has a gas distribution franchise in the County of Strathcona and bills customers directly. For several years, the company had also been reading household water meters and billing the County's water customers as well as handling the gas meter reading and billing activities.The combination of services saved the County the expense of meter reading and allowed it to delay the installation of a new computer and billing program.

For its part, Canadian Utilities Limited considered its gas and electrical power experience would be directly transferable to the skills and systems necessary to provide piped, potable water. The firm considered itself rich in resources of equipment, emergency response procedures, customer information systems, customer billing systems, fixed asset accounting, and related policies and procedures. The firm was clearly interested in establishing a regional water system in the same way that it provided gas and electrical power on a regional basis. The regional approach allows the capital costs to be spread over a large customer base.

In the Highway 14 area, Canadian Utilities owns a right-of-way from Edmonton to the Town of Viking. This provided the company with a major advantage. It provided a simple alternative to the time consuming and likely expensive effort to obtain easements from multiple individual owners along alternate routes. Because Canadian Utilities already owned its land, it would be relatively easy to design and install another pipeline in the right-of-way. In addition there were likely to be substantial time savings. Indeed the 68 km long pipeline was built by CU Water Ltd. in three months. The Commission's strategic advantage was that it could serve as a conduit for the private partner to obtain government funds to assist in covering capital costs. Some public funding was essential; otherwise water rates would not have been competitive with trucked water and the project wouldn't have been financially viable.

The capital cost of the pipeline was $12 million. The Province of Alberta provided capital grants of $4.9 million under an existing municipal water and waste water program. The amount of the grant was based on the size of the project and the funds available for such infrastructure that year. The grant is not repayable.

The member communities of the Commission could have received the $4.9 million grant themselves. However, some of the Commission members concluded that they could not manage the debt load if they built the system themselves. The Commission decided, therefore, to enter into the agreement with CU Water. The Commission is set up as a limited company, so that the borrowing power of individual municipalities is not jeopardized.

CU Water provided the remaining $7.1 million in funding and agreed to design, construct, own, operate and maintain the water supply system. There are water supply agreements with the municipalities that operate their own water distribution systems. Special franchise agreements exist with some of the municipalities that wish to have the company own and operate the distribution system within all or a portion of those municipalities. These agreements constrain the member municipalities from setting up a competing system during the lifetime of the agreement. However, truck operators can provide water to individual customers who choose not to subscribe to the CU Water service.

By the end of 1992, about 1,000 households were served by the system. Agreements with the member municipalities have been tailored to suit their particular needs. Under the agreements, the company:

- provides wholesale water to the Town of Tofield;
- owns and operates the distribution system and distributes water directly to households in the Village of Ryley;
- distributes water to rural residences within proximity of the transmission pipeline in designated rural franchise territories in the Counties of Beaver and Strathcona; and
- operates a major truck fill station with four fill bays to serve commercial water haulers in the area.

The pipeline was constructed with sufficient additional capacity to service the future needs of other communities located along Highway 14 such as the Town of Viking and the Village of Holden.

Although both are part of the Commission, additional funding would be required in order to expand the facilities for their use.

Customers pay user fees to CU Water Limited. Water rates are set out in the agreement between the Commission and the company, but in any event are regulated by the Public Utilities Board of Alberta which also controls service regulations and operating procedures. CU Water is presently engaged in a General Rate Application process to get new rates.

Under the terms of the agreement, Strathcona County buys water from the City of Edmonton (currently at a rate of $0.40/m^3) and sells it to the Highway 14 Regional Water Services Commission (for an additional $0.115/m^3).

The Commission in turn sells the water to CU Water (with an additional mark-up of approximately $0.065/m³). The total sale price is $0.58/m³. But there is also a transmission charge payable bringing the total cost to the consumer to approximately $2.00/m³. All customers are charged the same rate regardless of their location along the system.

The agreement sets out annual quantities of water which the Commission will supply to CU Water for transmission to its customers. If the consumption of water is less than anticipated, resulting in a revenue shortfall, CU Water absorbs the loss. However, the company can apply for rate adjustments in subsequent years.

Under the terms of the agreement, CU Water will supply water for a 25-year period and will generate revenues through user charges to individual customers. The Commission can terminate the agreement after 15 years with a 10-year notice, i.e. a 25-year term. CU Water can terminate the agreement after 15 years with a 5-year notice period, i.e. 20-year term. The agreement is automatically renewed every 5 years if neither party chooses to terminate it.

Although there is a buy back provision (see above), any buy back would have to deal with the fact that the transmission line runs within lands owned by Canadian Utilities.

5.3 Commentary

A number of benefits and impacts have been observed. Public sector cost savings (money and timing) occurred for the Municipality because the private partner already owned the right-of-way, otherwise negotiations for a right-of-way and associated public consultation costs would have been significant. The costs of monitoring during the construction period were lower because this was done by the private partner.

Canadian Utilities Limited, a major utility company, was able to finance its $7.1 million share of the project from internal sources. This obviated the requirement for the member municipalities to support the required level of borrowing had they undertaken the project themselves.

About 4,000 persons in the vicinity of the pipeline now have access to high quality water that they would not have otherwise.

During the two-year negotiation process leading to the public-private agreement, many public meetings, open houses and forums were held. For example, residents were given the opportunity to bring their water bills to meetings at which company officials would calculate the new bill based upon the proposed rate increases. The Town of Tofield held a plebiscite to give the residents the choice between the proposed pipeline or the town building its own water treatment plant. With a voter turnout of 75%, the pipeline was endorsed by a margin of 3 to 1.

After one year of operation, Canadian Utilities Water Limited felt that existing customers were satisfied. The high water rates continue, however, to be a problem in gaining additional rural customers along the pipeline. Existing farms or acreage owners continue to use their wells, even if the water quality is poor because well water is perceived to be "free". According to the company this degree of resistance was fully anticipated. The firm anticipates that these reluctant potential customers will subscribe to the service over a 5-10 year period as well pumps and infrastructure require service and replacement.

There appears to be some perception that access to dependable qualities of good water will have the effect also of opening up commercial and residential development opportunities when lots are connected to the convenience of "city water".

Canadian Utilities Water Limited has reported that when the truck fill station opened early in 1993 there was a boycott from commercial water haulers. Their grievance was that the pipeline would bring piped water to acreages and put the truckers out of business as residences would no longer require trucked water to fill their cisterns. While piped water is expensive, it is competitive

with the cost of trucked water, so the water haulers have had to maintain, or in some cases, lower their rates in order to retain customers. While this does not create new piped water customers, Canadian Utilities Water Limited argues that alternatives and competition are good for consumers.

The company is continuing its negotiations with certain members of the water commission. The firm would like to serve additional markets from its piped water supply, but is currently restricted due to the franchise area agreements. Canadian Utilities Water Limited argues that restrictions on the market area are felt by current customers because the firm cannot accumulate the customers necessary to lower the price for everyone through economies of scale.

While customers are apparently pleased with the supply and quality of water, there is an issue of fairness and water pricing between the privately supported Highway 14 project and neighbouring publicly funded water projects. Water facilities in nearby communities were funded at an earlier time almost exclusively through provincial grants. As a result, these communities charge only 40% to 60% of the rates charged to users under the Highway 14 project.

The Commission operates with two representatives from each of the six member municipalities, appointed by their respective Council. No additional staff are required by the Commission because CU Water operates the system. There is a consequent cost savings to the municipalities which do not, therefore, require additional operations staff. However, there are ongoing administrative costs associated with resolution of conflicting interpretations of the agreement.

As described above, there is a buy-back arrangement included in the agreement between the Commission and CU Water. However, the water transmission line is in the right-of-way owned by Canadian Utilities. This would surely complicate any effort to execute a buy-back. Additionally, a buy-back would likely have to be financed through municipal borrowing, the very reason the Commission originally entered into its water supply agreement with CU Water. The prospects of a buy-back in this situation do not appear strong.

6. NOVA SCOTIA SCHOOLS

Municipality: Sydney, Nova Scotia

Private sector partners: Proposals being reviewed.

Nature of partnership: Design, construction, ownership and operation.

Service provided: Education (a Life Long Learning Centre).

Why did municipality seek partnership?: Financial assistance and need for innovative design and operating solutions.

Was partnership successful?: Significant interest shown by private sector in the call for proposals; innovative design displayed in plans.

How was the private partner selected?: A three-stage proposal call process.

Why did private sector get involved?: Already engaged in the business of carrying out many of the functions required: building design, construction, and maintenance, and supply of computer equipment.

Savings and/or accelerated activities: Not yet determined.

Downside: Union concerns regarding possible loss of jobs and public concern with private sector profit making.

Impact on housing: Housing supply not directly affected. The proposal reduces government capital requirements and replaces them by ongoing lease payments.

Lesson learned: A multifaceted proposal call involving a variety of different private sector disciplines provides the opportunity to structure a multiphase and long term partnership.

Contact: Mr. Doug Nauss
Executive Director, Finance and Operations, Nova Scotia Department of Education
P.O. Box 578
Halifax NS B3J 2S9

6.1 Background

The Nova Scotia Department of Education is in charge of a proposal to involve the private sector in the design, construction, financing and operation of schools in the Province. The department realizes that technological developments influence both what is taught and how it is taught. In addition, buildings must be designed to provide for a variety of teaching and technological functions and must be able to be adapted to changing requirements. At the same time, the province's education budget, in real terms, continues to shrink. The department is seeking new and innovative ways to accomplish its objectives, including processes involving all levels of government and the participation of the private sector.

The Department of Education, therefore, put out a call for Expressions of Interest for individual groups of firms to design, construct, finance and operate a technologically advanced 600-student junior high school in Cape Breton. All proposals were to include ways to keep the technology current over the life of any agreement.

6.2 Expressions of Interest

Mr. Douglas Nauss, the Executive Director of Finance and Operations for the Nova Scotia Department of Education, indicated that the Cape Breton school is the first of three schools for which the Nova Scotia government is going to involve the private sector. The second school will be an elementary school in Halifax County, while the third will be a high school in King's County. The latter school will also contain facilities for

Acadia University and their Living Laboratory and Job Shadow programs.

With regards to the Life Long Learning Centre in Sydney, 17 Expressions of Interest were received. The short list included 3 applications, each of which contained computer manufacturers; architectural firms; construction companies; and property management firms. In all cases, the private sector will finance the school construction and will design it to incorporate the requirements of the Ministry of Education. Once constructed, the private consortium would continue to operate the school and to be responsible for maintenance and the provision of a capital improvement sinking fund over the life of the contract. The consortium will receive an annual lease payment from the Nova Scotia Department of Education, while the costs of teachers' salaries and school supplies will be born by the local school board. The question of whether the consortium will be exempt from property taxes is being negotiated.

In reviewing the 17 Expressions of Interest, it was noted that the designs of the schools were of a higher quality and much more innovative than the traditional design of schools in the Province.

6.3 Stage Two of the Proposal Process

Once the three groups had been short listed from the seventeen submissions of Stage 1, the Nova Scotia Department of Education provided a more detailed outline of its concerns and of the matters that should be covered in a more detailed proposal for the Life Long Learning Centre.

The Department of Education indicated that it is looking for cooperation and team work from academic, community, political and business leaders to ensure the availability and accessibility of diverse and multidisciplinary training, now and for the future. Teachers and students must have the necessary facilities, enhanced with classroom aids and technologies, to connect with databases and library resources to allow for the sharing of information and the facilitation of open communications. The Learning Centre must not only provide an environment that encourages children to be creative and competitive, but must also provide access and curriculum for all citizens.

Questions to be addressed in Stage 2 of the proposal include:

- What are the current and projected educational needs, and how will the proposed facility meet them?
- How will the solution be financed, and how will this benefit the Province of Nova Scotia?
- A turnkey solution should be provided in sufficient detail in order to determine the total cost of the project over the life of the agreement.
- What experience do you have with the design and construction of educational facilities, and what innovative ideas would you include in the design of a modern Life Long Learning Centre?
- How will you ensure that the computer technology provided stays current, is cost effective, and enhances the learning opportunity of students and the community, and how would you propose to finance this component of the submission?
- How would one ensure that teachers are trained and keep current on computer technology and software?
- How will the Learning Centre support community facilities?
- Break down your costs into design cost, construction cost, technology cost, operating cost and administration cost.

The Department of Education will evaluate the detailed proposals utilizing criteria which include:

- vision of education.
- schematic design.
- application of technology.
- detailed financing approach.

6.4 Roles and Responsibilities

The Cape Breton District School Board will be responsible for determining which students and staff will attend the school, the delivery of the instructional programs, professional development of staff, and the provision of day-to-day instructional supplies. The Board may also veto the lease of space within the complex to tenants which the Board determines are not appropriate within an educational setting. This veto right will be in accordance with any agreement that is reached among the vendor, the Department of Education and the Cape Breton District School Board.

The Department of Education will be responsible for establishing goals, learning outcomes and expectations; determining and defining programs to be offered; developing provincial policy; and allocating resources to the School Board.

The vendor is responsible to design, build, finance and lease the Centre to the satisfaction of the Department of Education and the Cape Breton District School Board. The vendor must provide a turnkey solution to meet the physical needs of the 600 junior high students who will attend the facility, and for enhancing the delivery of the curriculum so that the potential of technology enrichment is used to the greatest advantage within the Department and Board constraints. The vendor is also responsible for keeping the technology in the Centre current over the life of the agreement, and to maintain the building and provide maintenance and janitorial services.

6.5 Evaluation

The Department of Education laid out its requirements for a student- and community-oriented facility which will provide life long learning, and then left it up to the private sector proponents to design the type of facility that will meet these requirements.

The benefit of the integrated approach is that it maximizes the opportunities for innovation. Rather than specifying the type of building, from an operational standpoint, that an architect must design, the Department of Education has opened up a system where possible conflicts between design, construction costs and maintenance efficiencies are traded off within the private sector consortium. Whether the consortium is innovative and cost effective in any one area of design, construction or maintenance, and more costly in another segment is irrelevant in the long run, as it is the total package that will be evaluated.

Moreover, the Education Department has left it up to the inventiveness of the private sector to determine a technique to supply and maintain an up-to-date computer system in the school over the life of the agreement. The type of equipment, its configuration, the number of units, the space required to house this equipment, the techniques to build in a wiring system that can adapt to changing technological demands, and the technique of constantly upgrading hardware and software have been left up to the proponents. The suppliers of equipment, in turn, have had to ensure that their needs are incorporated in with the design and maintenance requirements for the facility as a whole.

As of December 1994, the Nova Scotia Department of Education had not selected the successful proponent. Phase 3 of the process will require the successful proponent to prepare a

detailed design solution and to finalize the budget for the project. Detailed agreements will then need to be signed between the proponent and the Department of Education and the Cape Breton District School Board before the building is built and put into operation. It will, therefore, be a number of years before this project can be evaluated both as to its possible cost savings in construction and maintenance, and its design's ability to reflect and adapt to changing technological requirements.

7. SCARBOROUGH PUBLIC LIBRARY

Municipality: Scarborough, Ontario

Private sector partner: Tridel, operating as Sumeru Construction Inc., and Mundet Limited.

Nature of partnership: Private financing.

Service provided: Library.

Why did municipality seek partnership?: Need to acquire land for a new library and desire for financial assistance in the library construction cost.

Was partnership successful?: Land was acquired for free; library was built and is operating, and Library Board cost was reduced.

How was private partner selected?: Private partner owned land in the area where a library was required.

Why did private sector get involved?: Private sector wished an increase in density to permit the development of apartments and library assistance was a condition of approval.

Savings and/or accelerated activities: Library Board acquired land for free and received a contribution of $500,000; housing built on previously institutionally zoned land.

Downside: From public standpoint, none.

Impact on housing: Development charges have the effect of taking some capital costs off the tax base where they are paid for by all taxpayers, and transferring them onto the capital cost of new housing, which are paid for by new home purchasers—a $500,000 contribution to the library cost approximately $450/dwelling unit. In return for the higher capital costs, new home purchasers receive the benefit of municipal services in their neighbourhood. Taxpayers in other parts of the municipality, who may not use the services, have lower operating costs for their housing (i.e. lower property taxes). Over 1,000 new dwelling units were approved for construction.

Lessons learned: In the absence of development charges, municipalities can successfully negotiate for specific public benefits as a condition of granting higher residential densities. Development charges transfer costs from the tax base to new housing. In times of ratepayer resistance to property tax increases, development charges may enable services to be provided to new development. The informal (negotiated) process has been replaced in Ontario with new development charges legislation.

Contact:

Mr. Kennedy Self
Director, Community Planning
Division, Planning and Building
Dept.
City of Scarborough
150 Borough Drive
Scarborough ON M1P 4N7

Mr. Peter Bassnett
Chief Executive Officer
Scarborough Public Library
Board
1076 Ellesmere Road
Scarborough ON M1P 4P4

7.1 Background

In 1987, the condominium apartment developer, Tridel, operating as Sumeru Construction Inc., along with Mundet Industries Limited, the owner of the land, applied to the City of Scarborough, Ontario to amend the Official Plan and to rezone a 7.5 hectare (19 acres) piece of land so as to permit the development of 1,112 dwelling units plus 13,989 m^2 (150,500 ft^2) of commercial and office space. The land is situated between an existing shopping centre, the Agincourt Mall, and the municipally-owned Tam O'Shanter golf course and, at one time, all of this land including the golf course had been in private ownership.

After the sale of the golf course to the Municipality of Metropolitan Toronto, the remaining private area of land continued to be designated for "institutional-recreational" uses. The site, however, is also within an area designated as an "Intermediate Centre" in the Scarborough Official Plan, wherein the Council's policies are to encourage the intensification of office, retail and residential activities. The zoning on the site was for a number of specific institutional and recreational uses.

7.2 Library Site Required

As part of the preliminary discussions with City officials, it became apparent to the Scarborough planners that the Scarborough Public Library Board was searching for a site for a new library in northwest Scarborough, and that a location close to the Kennedy Road and Sheppard Avenue intersection was the preferred location. This is the intersection at which the existing Agincourt Mall is located. The Library Board had found very few available sites that would be appropriate for a library, and those that they had found ranged from a cost of $500,000 to $950,000 with the cheaper sites located over 1 1/2 miles from the preferred location. With the approval of the Tridel application, there would be over 1,000 new dwelling units in the area and the need for a library in this general location would be increased. At the same time, a location for the library somewhere in the proposed development would be ideal for the Library Board. It was, therefore, decided that a provision of land for the construction of the new library could and should be made a condition of the requested rezoning and Official Plan amendment to permit apartments.

7.3 Density Increase Levy

At that time, the City of Scarborough did not have a consistent policy for charging developers for the cost of community facilities and had not passed any development charges by-laws. While specific charges were in place for sewer and water hook-up and the Council had recently passed a $400/dwelling unit parks development levy, other social benefits were, as a matter of practice, negotiated with developers as a condition of granting a higher density. The then Section 36 of the *Ontario Planning* Act permitted municipalities, in return for increasing residential densities, to require the provision of facilities considered appropriate by Council. These facilities could include such matters as landscaping, road improvements, day-care facilities, libraries and other facilities which, from time to time, were identified as being required.

In the final agreement, Tridel agreed to transfer to the Library Board 1,200 m^2 of land (approximately 1/4 acre). On this site, the Library Board would construct a library of 2,323 m^2 (25,000 ft^2) gross floor area. In addition, the developer agreed to provide a $500,000 contribution to the cost of the library building. The developer had also agreed to the construction or funding of a 76-child day-care centre, improvements to driveways and drop-offs at the adjacent public school, improvements to the adjacent Tam O'Shanter Park (construction or funding of 10 tennis courts, clubhouse facilities for public use), construction of a local street extension including paves and street furniture, and the construction or funding of street tree planting along the local street. The developer agreed to a cash contribution of $1.6 million to the City for the provision of community facilities and services as to be determined by Council.

7.4 Total Contribution

The total estimated cost to the developer amounted to between $2.85 and $3.0 million. For comparison purposes, now that Scarborough has a development charge by-law, the total charge for all growth-related facilities is $2,616 per apartment unit, and $4,044 for each townhouse unit. Thus, the 1,085 apartment units and 27 townhouses of this development would have resulted in a development charge of approximately $2.95 million.

7.5 A Negotiated Solution

As a result of the negotiations which took place for this development, which included not only

City planning staff but also the local member of Council and the local adjacent residential community, a mutually satisfactory agreement was arrived at. This agreement provided not only community benefits, but also traffic control measures which would prevent through traffic from flowing through the neighbouring community. Because of the agreement, there was no appeal of the Council decision to the Ontario Municipal Board. In Ontario, appeals to the Ontario Municipal Board (OMB) can result in a delay of between 6 months and a year for any development and these hearings also can incur, for the developer, legal and planning fees of approximately $500,000. Thus, being able to satisfy community concerns through negotiations saves the developer these additional costs.

The developer was able to begin construction of the first phase of the housing development and was able to get these units on the market in Toronto before the housing market cooled down in the early 1990s. Other developments in Scarborough (for example, adjacent to the Scarborough City Centre) which were approved by Council at approximately the same time but which were subject to the delays of an OMB hearing have not yet started construction, even though they were approved by the OMB.

As of late 1994, approximately half of the total permitted dwelling units had been constructed and were occupied, the next phase was under construction, and the Agincourt Public Library had been built and was in operation serving the residents of northwest Scarborough, including those living in the Tridel development. The total cost of the library was approximately $3.5 million for the building plus an additional $1.5 million for internal work and computer equipment. Thus, the $500,000 contribution by the developer provided 10% of the total cost of constructing the Agincourt Library.

From the developer's standpoint, the total contributions negotiated are approximately the same as would now be required under the Scarborough development charges by-law. From the developer's perspective, there are both benefits and costs of the development charges approach. Because the charges have been predetermined, there is more certainty as to what the ultimate cost will be. This certainty reduces the time necessary to carry out protracted negotiations with the community and the planning staff regarding proposed developments. On the other hand, the payment of development charges does not guarantee that the specific facilities that would serve the new development are, in fact, built at the time that the development is built. Negotiations regarding recreational facilities, tree planting and library provisions ensure that these facilities are constructed adjacent to the development and benefit not only the existing community, but the new residents. Additionally, it is still too early to tell whether the development charges approach, by removing direct negotiations with the adjacent community, might also remove the sense of satisfaction that the community may have in ensuring that benefits are provided in their community and to their satisfaction. Without this sense of participation there may be more appeals to the Ontario Municipal Board.

The design of the library was coordinated with the design of both the new housing development and the proposed expansion of the adjacent shopping centre. As of 1994, the retail-commercial expansion had not taken place and the shopping centre owner had leased a segment of the parking lot to the Library Board for $1 a year to provide for parking for library patrons. By leasing this land, the shopping centre owner does not have to pay business tax and the realty tax is reduced as the land is assessed at a residential as opposed to a commercial rate. Eventually, this land will be required for the expansion of the shopping centre and at that time the library will share its parking needs with those of the shopping centre itself. Thus, the original development agreement has been followed by operating agreements which are designed to ensure the integration of retail facilities, library, housing and recreational facilities into one coordinated development.

8. WATERLOO REGION ROADS

Municipality: Region of Waterloo

Private sector partners: ICI Realty Developments Inc. and other residential subdividers.

Nature of partnership: Private financing.

Service provided: Regional roads.

Why did municipality seek partnership?: Road construction not scheduled until 1999-2001, and no funds to construct earlier.

Was partnership successful?: Road construction is nearing completion.

How was private partner selected?: Land owners in the affected area wished to commence construction sooner than the scheduled provision of roads.

Why did private sector get involved?: Move forward construction of roads to get subdivision approval and start housing construction.

Savings and/or accelerated activities: Region saved the cost of the non-development portion of the road costs and housing construction able to commence 5 years earlier.

Downside: Municipal risk is that development charges may not be sufficient in the future to cover the municipal cost of the roads.

Impact on housing: Housing costs may have increased due to covering of municipal share of road construction plus carrying costs on developer's borrowings; on the other hand, 500 housing units able to be constructed 5 years earlier than otherwise.

Lessons learned: A mutually beneficial approach which is presently being negotiated for 3 other developments in Waterloo Region.

Contact: Mr. Ron Bronson
Manager of Financial Services
Regional Municipality of Waterloo
150 Frederick Street
Kitchener ON N2G 4J3

Mr. Karl Magid
President ICI Realty Development Inc.
66 Deerpath Road
Cambridge ON N1T 1H7

8.1 Background

This development was previously written up in a 1993 publication entitled "Innovative Financing: A Collection of Stories From Ontario Municipalities," produced by the Municipal Finance Officers Association of Ontario and the Association of Municipal Clerks and Treasurers of Ontario.

The Region of Waterloo had two road projects, namely the extensions to Lackner and Fairway Roads in the City of Kitchener, in its capital budgets and scheduled for construction in 1994. Unfortunately, budget pressures resulted in these two roads being deferred for construction in 1999 and 2001. At the same time, the subdivision plans of four developers in the area were given draft approval by the City of Kitchener with a condition that, before final approval and registration would be granted, the two regional roads had to be constructed. The reason was that the area of the subdivisions only had one access point, and such a situation was not satisfactory from a safety standpoint. Thus, the Regional decision to postpone construction of the roads meant that the developers affected were unable to get final approval of their subdivision plans and hence were unable to start construction.

8.2 Development Charges

The total cost of the two roads was approximately $2.9 million. The Region had concluded that approximately 90%, or $2.6 million, of the this amount could be attributed to new growth, while $300,000 of the total cost would be attributable to benefits to existing residents. Thus, the Region included the amount of $2.6 million in its development charges by-law. This by-law requires that a per dwelling levy be paid to the Region at the time of issuance of a building permit to start construction.

The developers approached the Region of Waterloo to determine some means whereby the construction of these two roads could be advanced. The Region felt that the front-end financing provisions of the *Development Charges Act* were not appropriate to their operations. The use of these provisions requires the definition of benefiting owners, and the regional philosophy in dealing with development charges is that the entire region benefits from the provision of services and facilities, and growth throughout the entire region pays for these through the development charges. Thus, any technique to involve early funding of these roads would require a partnership with specific developers who are anxious to advance the road construction timetable.

8.3 Funding Agreement

Thus, the fundamental concept was that the developers would have to invest money upfront and be reimbursed at a later date. Early on in the negotiations, the developers agreed to carry themselves the total municipal, or non-growth-related, portion of the road construction. Recognizing the financial problems besetting municipalities, the developers agreed to pay the total cost ($2.9 million) of the roads while being reimbursed at a later time with the $2.6 million growth-related component of the roads. It was further agreed that the developers would be reimbursed at the time that the Region had planned to fund the roads, i.e. in 1999 and 2001. In the meantime, the Region would be collecting development charges as housing units were built and would be accumulating, from these charges, that portion attributable to these two roads, in order to have the funds to repay the developers in the future.

The agreement was reached that in return for the developers contributing the $2.9 million cost, the Region would issue promissory notes to provide for the repayment. The actual amount of money to be repaid is equal to the face value plus an adjustment for inflation based upon the Southam Construction Index. This is the same inflation index that is built into the Region's development charge by-law.

The promissory notes are one year "evergreen" notes that have to be renewed each year. The renewal of the notes is covered by a side agreement between the developers and the Region. Thus, each year the notes are renewed for an amount equal to the value at the beginning of the year plus the amount of the Construction Index for that year. This technique was chosen in order that Ontario Municipal Board approval was not required, and to avoid the need of setting up a distinct sinking fund to accumulate the moneys necessary to repay the notes.

The developers then received promissory notes worth $2.6 million initially, indexed to inflation, and payable in 1999 and 2001. These notes were in a form that could be fully assigned to a third party. Obviously, it would be in the interest of the developers to find someone today to whom they could sell these notes in order to acquire some of the funds that they had to remit to the Region to permit road construction to begin. Unfortunately, these were not normal notes and the developers had difficulty in finding someone to buy them.

8.4 Financing Agreement

At this point in time, the Region came up with an innovative refinancing proposal.

The Regional Municipality of Waterloo has a Sinking Fund, which is a separate fund maintained by the municipality to accumulate

moneys necessary to retire the principal on debenture debt at its maturity. The Sinking Fund consists of money contributed annually by the Region plus interest gained by the investment of that money. At the time the particular debentures were issued and the annual Sinking Fund contributions calculated, an average annual return of 8% was considered to be achievable.

The Region suggested to the developers that it would buy back these promissory notes at a discount for investment in its own Sinking Fund. The discount on the notes was calculated such that the rate of return for the Region's fund would be 10.5% annually. This interest is in addition to the inflation index which is built into the face value of the notes to account for the increase in construction prices.

In addition, the agreement accompanying the notes indicates that, at the time of repurchase, the Region may hold back up to one-third of the amount in an escrow account in the event that there are any objections or appeals against the Region's development charge by-law itself. The reason for the holdback is that the Region must accumulate funds from development charges to repay these loans. Should there be an appeal against the development charges by-law which results in the development charge funded share of the project being reduced, then the face value of the note would have to be reduced accordingly. If, between now and the time when the promissory notes become due, all appeals against the development charges by-law are either dropped or resolved, the escrow funds will be paid out to the developers. Thus, the developers who were looking to receive full value for their notes would have a vested interest with respect to this particular agreement, at least, in having the provisions of the development charge by-law accepted and upheld. At this point in time, the Regional development charge by-law requires a payment of $4,300/dwelling unit for regional purposes, of which $513 is for road purposes.

8.5 Risks and Benefits

The Region of Waterloo runs a risk that the rate of construction in the Region may slow appreciably and the Region may not, in fact, receive the income that it anticipates from development charges. If this were the case, the Region would possibly need to defer other growth related expenditures so as to ensure that sufficient moneys were available to repay the value of the promissory notes out of the accumulated development charges fund. Under these circumstances, the priorities of the Region in capital investments would be distorted as the construction of Lackner and Fairway Roads would automatically be included as top priority items. Alternatively, the Region would have to finance the promissory notes out of general tax revenues. This was recognized upfront by the Regional Council, and they went into the agreement with "their eyes wide open".

The benefit to the Region was that the amount of money, $300,000, which was originally to be born out of general revenues for the construction of the roads, would be covered by the developers. In effect, the developers (or the new residents if the cost is passed on) are paying not only their growth-related share of the cost of these two roads, but also the share attributed to the existing population. These two roads would, in addition to serving the new development, take arterial level traffic off of existing local roads in the area and would put this traffic onto properly designed regional roads. The other benefit to the Region is that they were able to make an investment for their Sinking Fund which would pay 10.5% per year plus inflation over the life of the promissory notes. This is a very good investment from the Region's standpoint as the Region has calculated its Sinking Fund based upon achieving a yearly interest rate of 8% including inflation.

From the standpoint of the developers, the benefit of this arrangement is that they are able to register their plans of subdivision and to commence construction of homes 7 years earlier than would have been the case had the roads not been funded and built. The cost to the developers is the

additional $300,000 plus the amount that the notes were discounted when they were sold to the Region. Given that some of the notes would come due in 1999 and others in 2001, using the year 2000 as the average redemption time, and assuming the process began in 1994, these notes are discounted for 6 years. The present value of $2.6 million for 6 years at 10.5% is $1.428 million. This is the amount that the developers would receive if they sold their notes to a financial institution. Thus, the developer must still find $1.172 million ($2.6 million minus $1.428 million) plus $300,000, or $1.472 million. The carrying cost of this amount at $150,000 per year, until cash begins to flow from the sale of houses, could cost the developer another $200,000 to $300,000. Thus, the total cost to the developer of front-ending the road construction could be as high as $1.8 million. This is a cost which must, in some way, be recaptured either through a reduction in developer's profit or through an increase in the selling price of the homes.

8.6 Developer's Comments

A conversation with Mr. Karl Magid, the President of ICI Realty, one of the three subdividers involved in this process, confirmed our analysis of the cost of this project. While subsequent negotiations with the Region have resulted in the developers having to only put up the net amount of their cost, i.e. about $1.5 million as calculated above, they have also had to provide between $300,000 and $400,000 in addition as a "holdback" until such time as all of the appeals against the development charges by-law have been addressed.

Mr. Magid confirmed that the total cost of this road would be approximately $4,500 per dwelling unit. In fact, it might be greater if the townhouse units in the project (153 out of 449 units) are replaced by a smaller number of single family homes if there continues to be no market for townhouse units in Kitchener-Waterloo. This amount, $4,500, must be seen in light of the development charges presently being levied against developments in the Region. The ICI Realty subdivision which is affected by the Lackner and Fairway Roads Agreement is Phase 2 of what was originally a 130-acre subdivision brought forward in 1985. At the time of Phase 1, the total development charge for residential units was $2,000 per unit payable at the time of the issuance of the building permit. In 1994, development charges were $9,100 per unit, and 50% of this needed to be paid at the time of registration of the plan of subdivision. Thus, the cost to each unit was $9,100 plus $4,500, or $13,600 per unit. However, on top of this there was the carrying cost of the 50% of the levy which had been paid upfront. There is, within the ICI Realty subdivision, a 1.8 acre piece of land which has been designated for 57 townhouse units. Approximately $130,000 has been paid as a development charge upfront and there is no market today for townhouse units. In fact, if the land could be sold for an institutional use, such as a church, this might benefit the developer, as at least he would be able to get his prepaid development charge reimbursed. Where lots are sold to a builder, it is frequently the case that the builder is unable to pay, upfront, the development charge of those units. As a result, the subdivider was forced to continue to carry the cost of the prepaid portion of the development charge for an additional 6 months through taking back a mortgage which was interest free for those 6 months. Thus, the total development charges could have easily reached $15,000 per dwelling unit.

The alternative for the landowner was to not pay for the road construction upfront, but to await the scheduled completion of the roads in 2001. In fact, were it not for the fact that ICI Realty was able to gain the support of two other developers, ICI would not have been able to afford the upfront costs of the road. ICI Realty not only has the road costs as part of the agreement, but also had to dedicate the land required for the road, install fencing and put in planting and other landscaping, all with no recompense from the Region. The concern of the developers was that the roads had originally been scheduled for 1993, had been then moved to 1996, and later moved to 1999 and 2001. There was, therefore, no

assurance that the roads would be built in 2001, and the delays could continue indefinitely into the future. The $4,500 per unit, while increasing the total amount paid in development related charges by approximately 50%, at least had the result of transforming an uncertain future into a firm decision to build the roads immediately.

The final conclusion of Mr. Magid was that he was able to continue the build-out of this subdivision because it was purchased at 1985 land prices. For apartments in the Kitchener-Waterloo area, the total levies have now reached or surpassed the land value of apartment sites, which has virtually eliminated the construction of apartment buildings in this area. The combination of levies, development-oriented expenses, parks dedication and the time required for the approval of a subdivision by the many levels of governments and agencies not only in the Kitchener-Waterloo Region, but throughout Ontario, make it almost impossible to create a lot at a price to enable the construction of "affordable housing". Sales of new units are slow and there is increasing buyers resistance to the prices being asked. Developers have cut their costs as low as possible and have pushed as much of the price back against the cost of the raw land as they can. Their conclusion is that not only in this area but in all of Ontario the costs of levies, permit fees, parks dedications, municipal surcharges to offset department costs and the time involved in bringing a subdivision on-stream have brought the costs as high as the market can afford. Any further increases in the costs of development will simply result in a drying up of the new housing market.

9. ROCKLAND WASTEWATER TREATMENT FACILITIES

Municipality: Rockland, Ontario

Private sector partner: Dominion Waterworks Limited.

Nature of partnership: Financing, construction and operation.

Service provided: Sewage treatment.

Why did municipality seek partnership?: Required a source of external financing and construction expertise not available on municipal staff.

Was partnership successful?: Project did not proceed.

How was private partner selected?: Through agreement with local developers.

Why did private sector get involved?: Dominion Waterworks is in the business of building and operating wastewater treatment plants and private developers required the facility in order to obtain building permits.

Savings and/or accelerated activities?: Private sector operator experienced in sewage treatment plant operation, design and proposal provided financing.

Downside: Difficult for developers to guarantee revenue stream with the downturn in the economy.

Impact on housing: Without this plant, no new building permits or subdivisions could be approved in the Town. Hook-up charges would have resulted in higher house prices and correspondingly lower operating costs and taxes.

Lessons learned: Costs and risks must be shared and a close study made of the statutory framework.

Contact: Ms. Diane Labelle
Chief Administrative Officer
Town of Rockland
Box 909, 1560 Laurier St.
Rockland ON K4K 1L5

9.1 Introduction

The Rockland Wastewater Treatment Facility has been the subject of a number of articles. Price Waterhouse wrote about the project in Issue No. 2 of *Infrastructure*; the Ottawa Citizen had an article on May 26, 1994; the Canadian Construction Association put forward a description as an example of innovative infrastructure financing, and Mr. Jean Vachon, the then Chief Administrative Officer of Rockland, made a presentation to the Canadian Institute of Public Administration at their seminar on April 16, 1993.

Rockland is a town of about 7,800 people, located 35 km east of Ottawa. The town has benefited from its proximity to Ottawa, and has grown by about 40% over the last 5 years. Its house prices are somewhat cheaper than in other locations in the Ottawa region, and the municipality was looking forward to being able, ultimately, to accommodate a population of about 25,000 persons within the municipal boundaries.

At the present time, the Town of Rockland is served by an aerobic sewage treatment facility constructed in 1977, which has the capacity to serve a population of 7,500 persons. As the capacity began to be used up, the Ministry of Municipal Affairs stopped awarding draft subdivision approvals in 1988. In 1992, the Town stopped issuing building permits, except for approved subdivisions. The municipal Council was under pressure from local developers to find ways to permit development to continue. The municipality was also concerned about the loss of local construction jobs if a solution could not be reached to the sewage treatment limitation.

The municipality felt that it would not be possible to ask the existing residents to pay the cost of a sewage treatment plant that was necessary for increased development.

Council had adopted a development charges by-law in 1991, but with no development able to be undertaken in the absence of the sewage treatment plant, there was thus no development to pay development charges. Another concern was that the development charges approach only permitted those charges to cover the growth-related portion of infrastructure cost. A consultant retained by the municipality concluded that about 56% of the cost of the new facility would have to be charged to the existing residents of the town. Subsequent calculations have lowered this to 38%; nevertheless, the Town Council felt that such charges imposed against the existing residents would be excessive. The Council view, held unanimously, is that without development the facility would not be necessary; the required secondary treatment in the new facility is the result of an increasing population; and therefore no part of the construction cost should be assumed by the present ratepayers.

The municipality also examined the use of the front-end provisions of the Development Charges Act, but ran into difficulties in defining the benefiting area. While the area covered by new subdivisions on the edges of town could be defined as a benefiting area, such a charge would not then be levied on development on infill lots within the already built-up part of the city. There are, apparently, some 500 or 600 such lots in the town which could be developed without paying the development charge.

The municipality approached a variety of financial institutions and investment firms to attempt to convince them to assume the debt necessary to build the new sewage treatment plant. The idea was that a charge would be imposed when the building permit is issued and this would be used to pay off the debt. All of the institutions refused. Why they refused is unclear, but it may relate to what subsequently transpired: with a slowdown in building activity and a longer payback period, there may not be sufficient revenues from hook-up charges to pay off the principal and accumulated interest. Subsequently, following an unexpected meeting with representatives of Dominion Waterworks Limited, a proposal was put forward which led to the eventual deal.

9.2 The Rockland Solution

A new financial partnership was created composed of Dominion Waterworks Limited and a number of the major developers who owned land in Rockland. This partnership would be responsible for financing, constructing and operating a 10,000 m^3 capacity sewage treatment plant for up to 20 years. At the end of the 20-year period, the plant's ownership and responsibility for operation would revert to the municipality. Dominion Waterworks is a firm experienced in the operation of sewage treatment plants, and able to design and construct the necessary facilities. The developers who are the partners of Dominion Waterworks own land that otherwise could not be developed.

The total cost of the plant is fixed at $12.6 million. The new facility can service a population of about 18,000 persons. This will easily provide for the increase of 3,500 additional dwelling units to the existing 2,700 units in the town.

Using a fixed price of $12.6 million and 3,500 units, results in a charge per unit of $3,600. Therefore, the agreement proposed between the partnership and the Town is that the Town would collect a hook-up charge at the time of building permit for each new dwelling unit constructed in the Town for the next 20 years. The actual amount charged will increase by 12% per year with the first year charges being 12% above the $3,600 base, or $4,032. This increase is to cover the interest, or carrying cost, of the original investment. If a total of 3,500 new units have been connected before the end of the 20-year period, or should the capacity of 10,000 m^3 be used up before the end of the 20-year period, the agreement will terminate, ownership of the

system will revert to the Town, and the Town would collect no more hook-up fees. On the other hand, should the 20-year contract term end without 3,500 units having connected to the system, the municipality would be under no obligation to continue to collect hook-up fees. Thus, the entire risk inherent in a slowdown in development resulting in less income than expected would be borne entirely by the developers and Dominion Waterworks.

The Town did a calculation of the average cost per unit of this approach based on hooking up 175 new units each year for the 20 years. With the hook-up fees increasing each year by 12%, the total collections at the end of 20 years would have been approximately $50.84 million; divided by the 3,500 units results in an average cost per unit of $14,525. This was compared to the 1977 facilities which were constructed at a cost of $6.3 million. In that case, the financing was fixed over a 40-year period at an average of 12.5%. Such a contract provided for 1,300 units of capacity, and this worked out to $24,451 per units. Therefore, the proposed method was considered vastly superior to that used in the past. In an effort to ensure that the increase in the hook-up charges would not adversely affect the price of housing in Rockland, the municipality proposed to reduce its subdivision control fees and its development-oriented lot levies. Building permit fees were to remain at $900, but the lot levies per unit reduced from $5,500 to $3,650, and per unit subdivision control fees reduced from $1,200 to $300. Thus, even with an increase of $3,600 for sewer connections, the total charges per new dwelling unit only increase from $7,600 to $8,450.

An added benefit to the new plant is that it will consume less space than the existing lagoons, thereby freeing up approximately 60 acres of waterfront property between Highway 17 and the Ottawa River as the lagoons are filled in. Also, with development able to proceed, a number of new commercial projects could move forward in the Town.

Mr. Vachon, in the summary to his presentation to the Canadian Institute Seminar, summarized the three benefits of this deal for the Town of Rockland: 1) employment in the construction industry will continue; 2) prime development land will be rehabilitated; and 3), the most important element, is that the present Rockland ratepayers will not assume any of the cost.

9.3 Comments

This project is one where the Town of Rockland wished to obtain a new sewage treatment plant which would permit development in the town to continue. However, they wished to ensure that no part of the cost of the plant would be borne by the existing residents even though their consultant on development charges had indicated that 56% of the benefit of the investment (subsequently recalculated as approximately 38%) would accrue to the existing ratepayers. Thus, the entire cost had to be shifted onto new residents.

The discussions, which included the involvement of local developers in financing the solution, began in the early 1990's at a time when there was a significant rate of inflation in the housing industry. The solution that was reached would result in a charge of $3,600 plus 12% per year on every new residential building permit. This results in a sewer connection fee of just over $4,000 in the first year that the new process is in operation. Such a charge is less than half of the total permit and levy charges for new development. However, this connection charge increases in value very quickly over time such that in the 20th, or last, year of the agreement, the sewer connection charge would be $34,726 per unit. This is an increase of 9.6 times the base charge. Even if inflation were 5% per year, the inflation increase in 20 years would be a growth of 2.6 times. This means that in real dollars, the charge would have increased by about 3.7 times over the life of the contract. Looking at it another way, in the base year the sewer connection at $3,600 is 42.6% of a total development levy and permit charge of $8,450. At 12% per year, the sewer connection component would increase to $34,700, while the rest, assuming it rose at the inflation rate, would increase to $12,870. Thus, the sewer connection component of the total charges would grow from 42.6% to 72.9%.

Using the figures supplied by the Town, the average cost would be $14,525 per unit. However, the early hook-ups would pay substantially less than that, i.e. around $4,000 per unit, while the later hook-ups would pay considerably more than the average, i.e. $34,700. Thus, the impact of the sewer connection fee would grow significantly in both absolute and relative terms over the 20-year term of the agreement.

The proposal called for the Town of Rockland to co-sign the Dominion Waterworks' bank loan in order to get a better interest rate. This would thus put the Town at risk should the revenues be less than expected. The municipality then attempted to obtain guarantees from the developers that would cover the risk to the Town. Such guarantees could include either letters of credit or mortgages on property.

From the standpoint of the developers, the economic climate had changed significantly from that which was being experienced in the end of the 1980s. Previously, the rate of increase in house values, coupled with the high level of demand, would have made it easier to absorb the increased development-related charge in the selling price of houses.

The housing market today is one of depressed house prices with only moderate annual increases. Moreover, federal government expenditure reductions and the resulting concern about job security has further depressed the housing market in the Ottawa area.

The other concern that the developers must feel is the impact that the sewer connection charge will have on the demand for housing in Rockland as it increases, year-by-year, by 12%. Cheaper housing is one of the main attractions of Rockland and people are prepared for extra travel time in order to achieve less expensive housing. The escalating sewer connection charge could eliminate this attraction and, make Rockland more expensive than competing locations. There is then a need to achieve the 3,500 new dwelling unit target in as short a time as possible in order to avoid the later high charges. For example, in the tenth year, the sewage connection charge would have increased by a little over three times to $11,180 per year (as compared to the 9.6 times increase to $34,700 in the 20th year). Thus, if the growth in the short term should be slow, a larger percentage of the new units would be pushed into the latter part of the 20-year agreement period and would be subject to the much higher rates. These higher rates would themselves further slow down the demand for new dwelling units.

9.4 Evaluation

The Town Council representing today's citizens, while prepared to accept the higher operating costs of the new facility, were not prepared to accept any of the capital construction costs. Although a new sewage treatment system would provide a higher quality of treatment than the existing system, which would benefit all residents, new and old, and even though the freeing up of the 60 acres of land presently occupied by the lagoons would provide eventual revenue for the Town and would benefit existing citizens, and even though the growth that would ensue if a new treatment plant were built would benefit existing businesses through increased number of customers and would benefit existing construction workers, the Town decided that the existing residents should not pay one cent towards the capital cost of the new facilities. This was seen by Mr. Vachon, the Chief Administrative Officer, as being, in his words, the most important element: that present Rockland ratepayers will not assume any of the cost.

There may be times when the demand for new housing is such that the entire cost of a facility which benefits all of the residents of a town can be passed on to the new residents. Demand generated by a new industry, i.e. a new auto production plant, or by a new mine, or by the growth of an adjacent large metropolitan area, may provide sufficient demand for new housing that the house selling prices can incorporate all of the proposed charges. However, in a competitive situation and particularly in a time of moderate increase in demand, the passing on of significant development charges to new residents can have

the effect of reducing or curtailing the very growth that was expected in the first place. Thus, total revenues will increase as the charge per unit increases, but only up to a certain point. Beyond that point, increases in per unit costs could result in a reduction in the number of new units sufficient to actually reduce the total revenues received.

This project, with the above structuring and in the existing economic conditions, did not proceed.

10. OTTAWA-CARLETON: SEWAGE TREATMENT OPERATION

Municipality: Region of Ottawa-Carleton

Private sector partner: Professional Services Group Canada Incorporated.

Nature of partnership: Operate and maintain an existing facility.

Service provided: Wastewater treatment.

Why did municipality seek partnership?: Volume of work in commissioning a new facility and insufficient time to train staff.

Was partnership successful?: New facility was commissioned in time and is being run successfully.

How was private partner selected?: A Request For Proposals, proposal evaluation and selection.

Why did private sector get involved?: In the business of operating such facilities.

Savings and/or accelerated activities: Introduction of a new facility required new expertise; attempting to create such expertise internally and provide on the job training would likely have resulted in delays.

Downside: Present operations split between publicly operated and privately operated portions resulting in inefficiencies and Region bound to a long term contract which may be financially disadvantageous.

Impact on housing: No direct impact on housing supply, but an increase in operating costs was avoided.

Lessons learned: Partnership successful operationally when both sides are clear as to what each expects from the partnership.

Contact: Mr. McCartney, P.Eng.
Manager: Wastewater Treatment Plant
R.M.O.C.
800 Green Creek Drive
Gloucester ON K1J 1A6

10.1 Introduction

An account of the selection of a contract operator in Ottawa-Carleton was written up in the August 1994 edition of *Municipal World*. Information on this case study was obtained from that article, from telephone conversations with Dave McCartney, the Manager of the Wastewater Treatment Plant, and from reading of Council documents.

Wastewater treatment is essentially the separation of solid material from water, so that the water can be returned to the river or lake from whence it came. Primary treatment uses physical and chemical methods to separate solids, and secondary treatment uses biological and physical methods. At the end of the process, several types of solids are produced. Grit and other solids are returned to landfill sites, while scum and sludge are further processed to prevent putrification. Anaerobic micro-organisms are used to break down the organic material and, after a period of time, the water is removed and the stabilized and de-watered sludge, or bio-solids, are then either disposed of or reused.

10.2 The Ottawa-Carleton Wastewater System

During 1991 and 1992, the Robert Pickard Environmental Centre in Ottawa-Carleton was extensively rehabilitated and expanded. In a report dated October 9, 1991, the Commissioner of Environmental Services informed the Regional Council that the new secondary treatment process was scheduled for commissioning in September 1992, with full operational status by December 31, 1992 in order to meet the effluent requirements of the Ministry of the Environment.

A new sludge processing facility, including a digester complex and the thickening and de-watering building, would also be commissioned during 1992.

The Environmental Services Department had received a number of Expressions of Interest from companies interested in the design, construction and operation of a bio-solids reuse facility. At that time, bio-solids produced at the Pickard Centre were being landfilled at the Trail Road landfill site and, beginning early in 1992, they would be disposed of at the Laidlaw landfill facility in West Carleton. However, the report noted that landfilling bio-solids is not viewed as an optimal long term solution.

The department proposed that the new digester complex and sludge thickening and de-watering building at Pickard Centre be operated and maintained with a contracted work force for the following reasons:

- The limited time available made staffing with regional forces difficult.
- From an organizational standpoint, contracting the work force would permit the linkage of bio-solids processing with the development of a comprehensive bio-solids management program.
- Contracting out bio-solids processing provides a logical split in the management of the facilities.
- Control of the effluent quality would rest completely with the Region.
- A 3- to 5-year contract would generate documented operating costs which would allow a comparison with the alternatives of staffing with regional forces in the future.

The main difference between the old and the new systems is the amount of computer operated controllers which are involved. Program logic controllers are responsible for running a number of remote process controllers and experience is required to settle in the operation and to ensure that it runs efficiently. The Environmental Services Department felt that the separation of the one part of their overall operation and contracting it out to the private sector would be feasible as it operated as a distinct and separate component of the total wastewater treatment process.

The Commissioner of Environmental Services further proposed that three persons were required to supervise the contracted operation and maintenance facilities and for the development of a bio-solids management program. These included a Manager, who would be a senior engineer; a Superintendent of Sludge Processing, who would be a technologist with extensive practical experience; and a Contract Coordinator, who would provide technical and administrative support to the superintendent for contract administration.

As the *Municipal World* article noted, there were several reasons for contracting out the bio-solids facility operation. With the expansion and rehabilitation of the Pickard Centre, management was already stretched to its limits and the Region would have been hard-pressed to staff and train additional personnel to the required levels. An experienced operator could handle the system efficiently and cost effectively and would allow the Region to obtain the required expertise while maintaining its tight commissioning schedule.

10.3 Selection Process

A further report was provided by the Commissioner of Environmental Services to the Regional Council in April 1992. This report noted that a Selection Board had been set up which consisted of representatives from the Region, from RPA Consultants Limited, and from RV Anderson Associates Limited. This Board had prepared a comprehensive Request For Proposals (RFP) and a Proposal Evaluation System. The mandate of the Board was to find an operator who could not only carry out the operations efficiently and effectively, but also could protect the Region's investment in the context of obtaining "best value for money".

The Board had gathered a number of RFPs and contracts from other cities that currently contract out water and/or wastewater treatment facilities and used these as a base of reference for developing the Region's RFP. Prospective bidders were given 6 weeks to review the information on the Region's requirements and the site was made available on a scheduled basis to each of the firms. As a result of questions raised by some of the bidders, an Addendum was released and the proposed deadline was extended to give all the firms time to review and respond to the additional information.

A Basis of Payment methodology, including both fixed and variable fee components, was selected and bidders were required to submit both a technical proposal, outlining proposed scope of services, capabilities and experience, and a cost proposal, outlining the cost of the proposed services. The Board decided that a 5-year contract was sufficient time to ensure good economics and, in the end, competitive proposals were submitted by eight firms.

These proposals were evaluated by criteria which included general corporate capabilities, financial capabilities, management experience and depth, support services, number of projects underway, number of employees, value of operations, safety records and awards, home office of management and staffing plan, on-site staff qualifications and experience, technical understanding, operating approach, creativity, clarity of presentation, overall cost and value to the Region.

A detailed assessment was made of the technical proposals submitted by the eight firms and three firms were short-listed as a result of this analysis. These were Professional Services Group, Operations Management Int., and Air and Water Technologies. Reference checks and interviews with each of the short-listed firms led to clarification of the proposals and approach, and an adjusted technical evaluation.

A comprehensive financial analysis of the cost proposals was undertaken, including an evaluation of start-up and normal operating costs and anticipated inflation-related rate changes. Normal inflated operating costs were used as the basis of comparison, and the low bidder received 50 points, a bid 50% higher than that would have received zero points, and other bids were prorated. Professional Services Group (PSG) was the selected bidder even though their operating costs were, by a slight amount (0.2%), higher than the lowest bidder. However, their value factor was indicative of clear, comprehensive performance guarantees, the most experienced operator, large complex plant experience, excellent references, highly qualified on-site staff, the most comprehensive centrifuge maintenance program, unambiguous commitment to meet the terms of the agreement, and the highest level of confidence of the Board.

10.4 The Contract

One of the concerns of the Region in privatizing operations was to ensure that the facility operated at high quality standards, minimized potential odour problems, and maintain the effectiveness of the system components. The operating and maintenance agreement, signed April 21, 1992, set out the requirements of the operator of the facilities.

The operator is to manage, operate and maintain the facilities, including the provision of repairs and replacements, in such a manner as to comply with all the requirements of the Ontario Ministry of the Environment and all statutes and regulations of Canada and Ontario. During the time of commissioning of the facilities, the operator is to work with the Region and the construction contractors by providing staff, technical and other support. The operator is to assume all responsibilities for the management and operation of each part of the facility as it is released for operation.

The agreement requires weekly review meetings with the Region, monthly meetings and operation and maintenance reports, and an annual report within 30 days after the end of each year. This annual report summarizes the operations during the year, describes all significant events, and

recommends modifications to the maintenance program and for capital expenditures for each of the upcoming 5 years.

A staffing plan has been agreed to with specific qualifications laid down for a number of key positions. It is agreed that the staffing plan is necessary to ensure the safe and efficient operation of the facilities, and the operator is to fill each vacancy within 30 days. The operator agreed to reimburse the Region $750 per working day for each staffing position that remained vacant beyond the 30 day period.

The operator is responsible for repair and replacement up to a cost of $25,000 per element. Repair and replacement costs of greater than $25,000 may be jointly paid for by the Region and the operator. Other clauses in the agreement refer to hours of operation, safety program, sludge disposal, facilities and grounds appearance, public relations, operating manuals, standard operating procedures, testing of laboratory analysis, emergency response programs, accounting and litigation support.

The agreement may be terminated by the Region if insurance coverage lapses, if clauses in the agreement are breached and such failures are not rectified within a reasonable time, or if the Region gives the operator 90 days written notice that a termination will become effective. The operator may terminate the agreement if there is a breach by the Region and the Region fails to rectify such breach within a reasonable period of time.

When the agreement terminates, the operator is to return the facilities in the same condition, ordinary wear and tear excepted, as those facilities existed on the date of acquisition. The operator is to assist the Region in assuming the operation and maintenance of the facilities, and the operator is to be compensated for the unamortized balance of the cost of equipment purchased by the operator in connection with the performance of the services laid out in the agreement, including laboratory equipment, office equipment, and vehicles purchased or leased.

The Region is responsible for management and operation of the rest of the Pickard Centre in such a manner as to comply with the requirements of the Ministry of the Environment. The Region is also to ensure, to the extent reasonably possible, that the Region's activities at the rest of the Pickard Centre do not impede the operator's ability to perform its duties and responsibilities.

10.5 Comments

The contracting out of the bio-solids facility has successfully met the needs of the Region to integrate a new facility into their overall wastewater management system as quickly and as efficiently as possible. PSG's experience in operating a variety of treatment systems has proven to be invaluable. They assisted in the commissioning operations of the facility and identified changes which improved the operations. PSG worked in close cooperation with both the regional personnel and construction engineers to achieve operational objectives quickly and efficiently.

The Region maintains constant and close scrutiny of the day-to-day operations of the facility. The relationship between the regional staff and PSG personnel is a good one, and the bio-solids facility works as an integral part of the total Pickard Environmental Centre.

One concern that the regional staff now have is that the cost to the Region may be unnecessarily high. The difficulty was in estimating the operating costs of a new facility, partially based on experience with similar facilities, and in determining necessary staffing and maintenance levels. Staff requirements for certain operations are stated in the contract and it now appears that the system could operate with fewer staff. However, until the contract is amended, the Region must continue to pay for the higher staff levels. Similarly, a maintenance schedule is specified for the centrifuges and it is now apparent that this work could be done less frequently. Moreover, the entire operation has turned out to be cheaper to run than originally

expected, but there is no provision in the contract for any profit sharing with the Region.

Dave McCartney, the Manager of the Wastewater Treatment Plant, who has been associated from the beginning with this facility, believes that, at the end of the contract period, it will probably turn out to be cheaper to have one operator, either the Region or a private firm, run the entire system. There is a certain amount of administrative and operational overlap and lack of flexibility in having two operators each run part of an overall system. While the expertise of PSG was invaluable in setting up the system, it is now becoming apparent that regional personnel will have developed the expertise necessary to run a fully integrated system should that be the decision that is made. Mr. McCartney feels that running an integrated system would be more cost effective whether done by the municipality or a private operator. Whether the Region will decide to privatize the whole operation, take back the entire operation, or continue joint running, will not be determined until the end of the contract period.

One benefit of the present contract is that it gives the regional staff firsthand experience with privatization. Because of the joint operations and the monitoring of the private operator by the Region, the municipality can learn what the private operator does, what are the costs and benefits of those operations, and how they compare to regional practices.

Mr. McCartney feels that, intrinsically, there is no reason why government cannot run an operation as efficiently and as effectively as a private firm. There is, obviously, a difference of philosophy between government and private operators. While the public sector is often accused of "gilding the lily", there is a sense that one is running a system for the benefit of future generations. Operators can take pride in their contribution to a healthy environment and can see their job as providing benefit to their families and to the community in the future. A private operator is more likely to be concerned about making a profit on an ongoing basis, and hence is likely to take a shorter-term view of the importance of the whole operation. It is necessary, therefore, in an operation such as the bio-solids facility at the Robert Pickard Environmental Centre, to put into place both a contract and regional monitors who ensure that not only are day-to-day operating standards being met, but also the equipment is maintained and renewed as required to ensure that it continues at the same level of efficiency and effectiveness as it began when the private operator took over the facilities. There is always a fear in the public sector that a private operator may, in a short term contract, save money by postponing maintenance costs and essentially "run the operation into the ground" if not closely monitored. Obviously, if the operator is in the business of operating sewage treatment plants and has a reputation to maintain, such lack of maintenance is unlikely to be a problem.

While a well motivated public sector can run the operations as well as a private sector firm, the difficulty with public operations is that, over time, there may be a tendency to become complacent, to lose interest in applying innovations, and to carry out operations accordingly to fairly static operating procedures. Several years ago, the existing regional treatment plant, built in the 1960s, was poorly run and required expenditure of $360 million to fix it up. Employment in the sewage treatment system was then seen as a dead-end job with low status due to the perception that the workers were simply "working with shit". Now the workers see themselves as environmentalists who take pride in their operations. The operating environment is pleasant and the workers take pride in their job. However, while the private sector is constantly motivated by costs and is always on the lookout for new procedures or techniques that would provide cost savings, there is no such ongoing external pressure on a publicly run system to maintain a high level of efficiency and effectiveness. Thus, public sector operations require more emphasis on a management structure which can maintain morale and encourage innovation. Maintaining an ongoing commitment to maintaining excellence in operations is a challenge for management whether the firm be run by private or public operators.

11. SAINTE-MARIE (BEAUCE) WATER TREATMENT PLANT

Municipality: Sainte-Marie-de-Beauce, Quebec

Private sector partner: Aquatech

Nature of partnership: Operation.

Service provided: Water treatment.

Why did municipality seek partnership?: To control costs and gain access to highly qualified staff.

Was partnership successful?: Municipality has avoided the need to acquire additional staff.

How was private partner selected?: Proposal call basis.

Why did private sector get involved?: Aquatech is in the business of operating water and sewage treatment plants.

Savings: Operating cost savings achieved.

Downside: None to date.

Impact on housing: No direct impact on housing supply, but operating costs reduced.

Lessons learned: Smaller municipalities can share technological expertise.

Contact: Mr. Gilles Fortin
Directeur Général
Cité de Sainte-Marie-de-Beauce
Sainte-Marie-de-Beauce QC

11.1 Introduction

Sainte-Marie-de-Beauce, a municipality of approximately 10,500 inhabitants, in conjunction with several adjacent municipalities, has retained the private sector firm "Aquatech" to operate its water treatment plant. Aquatech did not participate in the construction nor the financing of the plant as the company specializes in plant operations.

The municipality was responsible for financing and constructing the plant which remains in their possession. Sainte-Marie is also responsible for furnishing all of the required supplies and equipment parts. Aquatech, for its part, provides full-time technical staff to operate the plant. Aquatech is also responsible for providing any specialized engineering or other highly skilled services required to solve specific operational problems.

11.2 Comments

The difficulty for small municipalities is that modern water and sewage treatment plants require a high level of staff expertise, and this expertise is expensive to obtain and retain if carried by only one municipality. Through use of a private sector firm which provides a similar service to a number of municipalities in the area, each of the municipalities is able to share the cost.

Another benefit from the standpoint of the municipality is that it no longer has to deal with the administration of the employees operating the plant. The municipality has no overtime payments to make, does not have to deal with specific operating problems which might require expertise beyond that available in the municipal staff, does not have to deal with labour contracts, and is not responsible for ensuring that vacancies are expeditiously filled with qualified personnel.

On the other hand, Aquatech is required, under the provision of their operating agreement, to provide at least one technician having a minimum of 5 years working experience who would be located in Sainte-Marie's treatment plant over the duration of the contract. In this way, the municipality has the guarantee that their equipment will be operated by experienced staff who are well versed in the details of Sainte-Marie's system.

From the standpoint of Aquatech, the more municipalities that it can involve in its operation, the more it can reduce its unit costs and can hire the very specialized workers that are necessary to provide the highest level of service.

Sainte-Marie had recently installed new equipment in its treatment plant and did not have the track record of experience in working with such equipment. Aquatech was able to provide personnel who had experience in the type of equipment installed in the Sainte-Marie plant and was able to ensure that the new components fit into the overall operation of the system with a minimum amount of disruption.

According to Mr. Gilles Fortin, the Chief Administrative Officer of the Municipality, partnerships such as the one between Sainte-Marie-de-Beauce and Aquatech are profitable to small municipalities if the private sector can provide technical staff that is stable and familiar with the equipment, and can also provide the highly skilled professionals which are occasionally needed when specific problems arise.